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GRE® CBT

6th Edition

Jerry Bobrow, Ph.D.

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GRE® CBT

6th Edition

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John Stuart Mill, *On the Subjection of Women,* 1896.

Richard Losick and Dale Kaiser, "Why and How Bacteria Communicate," *Scientific American,* Volume 276, No. 2, February 1997. Page 69.

James R. Stamm, *A Short History of Spanish Literature,* Doubleday and Company, Inc., Garden City, New York, 1967, Pages 52-53.

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— Jerry Bobrow

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Preface

The Graduate Record Exam Computer-Based Test (GRE CBT), familiar problems with a new delivery system

Many students are needlessly afraid of the computer-adaptive GRE. Although the delivery system and format are different from those of the paper-and-pencil test, the types of questions are still the same. So don't *be concerned* about the computer-adaptive GRE test; *be prepared!*

Better scores result from thorough preparation. Because this new-format exam adapts to your ability level, you must use your study time more effectively than ever before to get thorough preparation and raise your level. You need the most comprehensive test preparation guide available to give you that extra edge. It must be complete, direct, precise, and easy to use, giving you all the information you need to do your best on the GRE CBT.

In keeping with the fine tradition of CliffsNotes, this guide was developed by leading experts in the field of test preparation as part of a series designed to specifically meet these standards. The testing strategies, techniques, and materials have been researched, tested, and evaluated and are presently used at GRE CBT preparation programs at many leading colleges and universities. This guide features the Bobrow Test Preparation Services approach, which focuses on a careful **analysis of each exam area** followed by **strategies, techniques, and practice problems** categorized by level of difficulty to help you maximize your score. Taking, reviewing, charting, and analyzing a specially designed **simulation computer-adaptive type of GRE** test will give you **invaluable insight** into the GRE CBT as well as outstanding test practice. All tests and practice problems have answers and complete explanations.

Special introductory sections are included featuring an **overview of the computerized test-taking process** and a **Patterned Plan of Attack** for each type of question.

This guide was written to give you the edge in doing your best by maximizing your effort in a minimum amount of time. If you take the time to follow the **Study Guide Checklist** in this book, you will get the best preparation possible.

Study Guide Checklist

❏ 1. Read the new GRE CBT Information Bulletin.

❏ 2. Become familiar with the Format of the Test and the General Description, page 1.

❏ 3. Familiarize yourself with the answers to the Questions Commonly Asked about the GRE CBT, page 3.

❏ 4. Review Taking the GRE CBT: An Overview of the Process, beginning on page 5.

❏ 5. Learn the Test-Taking Strategies for the computer-adaptive test, page 9.

❏ 6. Carefully read Part I, Analysis of Exam Areas, beginning on page 15.

❏ 7. Work the practice problems arranged by levels of difficulty in each area.

❏ 8. Carefully read the answers and explanations for these practice problems.

❏ 9. Strictly observing time allotments, work the problems as directed in the simulated Full-Length GRE CBT Practice Test, beginning on page 273.

❏ 10. Check all your results, pages 351–387.

❏ 11. Chart and analyze your results, pages 343–350.

❏ 12. Carefully read the answers and explanations for the problems you worked.

❏ 13. Return to the simulated computer-adaptive test and work all the problems in an organized manner. First work all the problems at the 1 level, that is, 4-1, 5-1, 6-1, 7-1, and so on.

❏ 14. Review the answer to each problem after you work it.

❏ 15. After attempting and reviewing the simpler problems, work all the level 2 problems, that is, 4-2, 5-2, 6-2, 7-2, and so on.

❏ 16. Review the answer to each problem after you work it.

❏ 17. In the same manner, work and review the answers to the level 3 problems, then the level 4 problems, and then the level 5 problems.

❏ 18. Carefully reread Part II, beginning on page 273.

❏ 19. Strictly observing time allotments, take the second Practice Test, beginning on page 391.

❏ 20. Check all your results, pages 419–431.

❏ 21. Chart and analyze your results, pages 417–431.

❏ 22. Carefully read the answers and explanations for these practice problems.

❏ 23. Review Taking the GRE CBT: An Overview of the Process, beginning on page 5.

❏ 24. Go over Final Preparations on page 433.

INTRODUCTION TO THE GRE CBT: THE COMPUTER-BASED GRADUATE RECORD EXAMINATION GENERAL TEST

FORMAT OF THE TEST		
Section	*Minutes*	*Number of Questions*
Verbal Ability Antonyms, Analogies Sentence Completion and Reading Comprehension (questions are intermingled)	30	30
Quantitative Ability Quantitative Comparison and Math Ability (questions are intermingled)	45	28
Analytical Ability Analytical Reasoning and Logical Reasoning (questions are intermingled)	60	35
Pre-Test Section (one of the following)	Varies	Varies
Verbal, Quantitative, or Analytical		
Research Section (may be included)	Varies	Varies

Plan to be at the test center for up to $4\frac{1}{2}$ hours. You may find the following information helpful:

- The Pre-Test Section is unidentified and will not count toward your score. Be sure to do both Verbal, Quantitative, or Analytical Sections because you don't know which one will count toward your score.

- The Research Section, which may appear, will be identified and will not be scored.

- Tutorials will be available for review before the test is administered.

- An optional ten-minute break is given after Section 2.

Note: Format, scoring, and order of sections are subject to change.

General Description

The new GRE CBT is composed of a 30-minute Verbal Ability section (30 multiple-choice questions), a 45-minute Quantitative Ability section (28 multiple-choice questions), and a 60-minute Analytical Ability section (35 multiple-choice questions). It also contains a pre-test section (Verbal, Quantitative, or Analytical) that doesn't count toward your score, and possibly an identified research section of experimental questions, which are unscored. The Verbal, Quantitative, and Analytical sections are each scored from 200 to 800, with an average score of about 500 on each.

The test is composed of the following sections:

Verbal: Antonyms, Analogies, Sentence Completions, and Reading Comprehension are intermingled.

- **Antonyms:** You select a word that is most nearly opposite in meaning.

- **Analogies:** You select a pair of words that best expresses a relationship that is similar to that of an original pair of words.

- **Sentence Completions:** A word or words are omitted from a sentence. You select the word or words that, when inserted, best fit the whole sentence.

- **Reading Comprehension:** You answer questions about reading passages from a variety of subjects.

Quantitative: Quantitative Comparisons and Math Ability (multiple-choice) are intermingled.

- **Quantitative Comparison:** You are required to determine the relationship between two quantities.

- **Math Ability:** You solve multiple-choice general math and word-type problems.

Analytical Ability: Analytical Reasoning and Logical Reasoning are intermingled.

- **Analytical Reasoning:** You need to draw reasoned conclusions and relationships based on different sets of statements.

- **Logical Reasoning:** You derive logical conclusions and relationships from a variety of situations and passages.

Questions Commonly Asked about the Computer–Based GRE General Test (GRE CBT)

Q: Who administers the GRE CBT?

A: The GRE CBT is written and administered by Educational Testing Service (ETS).

Q: What is the computer-based General Test (GRE CBT)?

A: The GRE CBT is a computer-adaptive test that uses the same types of questions and covers the same content areas as the old paper-based test. On the computer-adaptive GRE CBT, the screen displays one multiple-choice question at a time. The first question is of medium difficulty. Each subsequent question varies in difficulty based on responses to all previous questions. The questions that you respond to are chosen from a large pool of questions that have been categorized by level of difficulty and content. As the level of questions adjusts to your ability level, you get more questions that are within your range. This "adaptive" system ultimately determines your level of ability. On this exam, you may not return to an earlier question, and you must answer every question.

Q: Are scores from the computer-based GRE comparable to those on the paper-based GRE?

A: GRE Board and ETS research indicate that the scores are comparable.

Q: What computer skills are necessary for the GRE CBT?

A: Because the GRE CBT is preceded by a tutorial program that starts at the basics, minimal computer skills are required. The tutorials include using a mouse, entering and confirming a response, changing a response, accessing the help function, and moving to the next question. A help function is available throughout the test.

Q: When is the computer-based GRE given?

A: The computer-based GRE is offered every week for the first three weeks in each month. You should schedule your GRE CBT appointment early to get your preferred time, date, and location. Testing center hours may vary.

Q: How do I schedule my GRE CBT appointment?

A: You can schedule your appointment, or reschedule your appointment if necessary, by calling your local testing center, the appropriate Regional Registration Center, or 1-800-GRE-CALL (Sylvan). Phone numbers and a complete list of testing centers are in your information bulletin and on the GRE Web site (www.gre.org).

Q: When should I schedule my appointment?

A: Carefully check your admission deadlines to guide you in scheduling your appointment. You should schedule your appointment early to get preferred dates, times, and locations.

Q: Where do I take the GRE CBT?

A: There are approximately 400 computer-based testing centers in North America and other selected cities. Testing centers are located at Sylvan Technology Centers, at colleges and universities, and in ETS field service offices.

Q: What will the test center be like?

A: The conditions at the test center should be comfortable and quiet, because the tests are administered individually at separate testing stations.

Q: When should I arrive at the testing center?

A: Arrive at the testing center at least 30 minutes before your scheduled testing time for check-in procedures.

Q: What should I bring to the testing center?

A: Bring a valid, acceptable, photo-bearing ID, your score recipient information, your authorization voucher (if you requested one from ETS), and some sharpened pencils for scratch work on the scratch paper provided.

Q: How long will I be at the testing center?

A: Although the scored section of your test takes 2 hours and 15 minutes, be prepared to spend up to $4\frac{1}{2}$ hours at the center. You will spend time on tutorials, background information, pretest and/or research sections, score recipient selection, and a survey.

Q: Will there be any breaks during the test?

A: Yes, an optional 10-minute break is given after Section 2. If you leave at any other time, test timing will not stop.

Q: Can I use scratch paper on the test?

A: You will receive scratch paper at the testing site. Use the scratch paper to your advantage to sketch diagrams, do calculations, and so on.

Q: Should I guess on the GRE CBT?

A: Yes. If you get stuck on a question or simply don't know the answer, guess. You cannot go on to the next question until you enter and confirm an answer on the present question.

Q: How long does it take to get my scores?

A: You can get your "unofficial" scores on-site almost immediately after completing the test. Your official score report will be available within about 2 weeks of your testing. At the testing site, you can also designate the schools that are to receive your scores.

Q: Is standby testing available?

A: Standby testing may be available at some permanent test centers on a first-come, first-served basis only if space allows.

Q: Can I take the GRE CBT more than once?

A: Yes. You may retake the exam once per calendar month. That is, if you take your first GRE any time in January, then the next time you can take the test is any time in February or later.

Q: Will accommodations be made for test-takers with disabilities?

A: Yes, accommodations similar to those for previous exams will be available. All centers should be equipped with appropriate devices to aide test-takers with disabilities, such as wheelchair access and screen magnification. Check with your center to make sure that the proper accommodations are available.

Q: How should I prepare for the GRE CBT?

A: Preparing for the GRE CBT requires a careful plan. Make sure that you are familiar with and understand each question type. Become comfortable with the format of the new exam and the computer delivery system. Review subject matter—basic math skills, vocabulary, and so on. Practice, practice, practice.

Q: How is my GRE CBT score used?

A: The GRE CBT is used as part of an assessment of your probable success in graduate school. Other factors, such as undergraduate grades, interviews, and letters of recommendation, can also figure into this assessment. The importance of GRE CBT scores (and the individual section scores) varies from institution to institution, so you are wise to contact the graduate schools to which you are applying for further information. Be sure to ask whether they will use the scores for each section (verbal, quantitative, and analytical); what score is necessary in each section used (or what total is required); and what scores are used if you take the test more than once.

Q: Can I get more information?

A: Yes. Contact ETS by phone, Internet, or mail at GRE-ETS, P.O. Box 6000, Princeton, NJ 08541-6000; phone: 609-771-7670; Internet: www.gre.org.

Taking the GRE CBT: An Overview of the Process

Many test-takers are needlessly afraid of computerized exams. You should understand that the testing company has gone to great lengths to make sure that the computerized test is easy to use for even the computer novice. It has included very basic information tutorials to make sure that you are comfortable working with the computer. Take advantage of these tutorials. Work through them slowly.

Test Center Procedure

- Be sure to arrive at the test center at least 30 minutes before your scheduled time. Don't be late! When you arrive at the test center, a receptionist will check you in. Be sure to have

  - A valid, acceptable, photo-bearing ID

  - Your score recipient information

  - Your authorization voucher (if you requested one from ETS)

- After you have checked in, you will be assigned a seat. You will receive scratch paper, and you may request more during the test. Following general instructions and preliminary procedures, you will be given time to work through the interactive tutorials. After the tutorials, you will begin the actual GRE CBT.

- During the exam, if you have a problem with the computer, need additional scratch paper, or wish to speak to an administrator for any reason, raise your hand to get his or her attention.

Using the Interactive Tutorials

Selecting an Answer

To select your answer choice in the multiple-choice sections, use your mouse to move the arrow to the oval in front of your answer choice and then click. At that time, the oval becomes blackened, showing your choice. For example,

18:15	GRE CBT Section 2: Quantitative	24 of 28

Which one of the following is a possible value for x in the equation $x^2 - 5x + 4 = 0$?

- ⬭ -1
- ⬭ 0
- ⬤ 1
- ⬭ 2
- ⬭ 3

Test Quit	Section Exit	Time	? Help	Answer Confirm	Next

Notice the time display in the upper-left corner of the screen, and the problem you are on and the total number of problems in the section in the upper-right corner.

The Functions Tutorials

These tutorials review using a mouse, using the testing tools, and scrolling through long passages or graphs.

Using a Mouse

You use a mouse to enter your answer choice or input other information. Simply move the arrow to your selection by moving the mouse to the appropriate position and click (press) a button on the mouse. Remember that the tail (cord) of the mouse should always point away from you and that your fingers should be close to the buttons.

Using the Screen Tools

The following illustration shows the bottom part of the screen, on which the various tools are displayed.

- Quit (Test). You can terminate the test administration by clicking Quit. If you click Quit, a message will appear asking you to confirm that you wish to quit the test. If you quit the test, you won't receive scores on any of the sections.

- Exit (Section). You can exit the section you are in by clicking Exit. If you click Exit, a message will appear asking you to confirm that you wish to exit the section. After you exit a section, you cannot return to it.

- Time. You can select to turn the time display on or off by clicking Time. When only five minutes remain in the section, the time is automatically displayed. You should regularly check the time remaining to help pace yourself.

- Help. If you need to view the directions again or wish to review information given in the tutorials, click Help.

- Next and Answer Confirm. After entering your answer (clicking the oval), click Next and then Answer Confirm. This process saves your answer and allows a new question to appear. *You cannot go back to this question or any previous question.* You can change the answer as often as you want until you have confirmed it by clicking Next and Answer Confirm.

Test	Section			?	Answer	
Quit	Exit	Time		Help	Confirm	Next

Note: If a tool is gray (not dark), it will not work. Only dark tools work when clicked.

Using the Scroll Bar

If a passage is too long to fit on the screen, or if there is too much information in a graph or chart to fit on the screen, a scroll bar will appear alongside the passage or graph that is contained in the left portion of the screen. The scrolling portion of the screen is called a *scrolling pane.* The scroll bar is used to vertically move (scroll) the nonvisible information onto the scrolling pane. The information will not move horizontally. In the screen below, notice the scroll bar, the arrows in the scroll bar, and the status bar (the graph area with white letters) at the top of the scrolling pane.

29:15	GRE CBT Section 1: Verbal	21 of 30

Questions 21 to 22 **Beginning**	The author's main purpose in writing this passage is to

Woodrow Wilson won his first office in 1910 when he was elected governor of New Jersey. Two years *Line* later he was elected president in (5) one of the most rapid political rises in our history. For a while Wilson had practiced law but found it both boring and unprofitable; then he became a political scientist and (10) finally president of Princeton University. He did an outstanding job at Princeton, but when he was asked by the Democratic boss of New Jersey, Jim Smith, to run for

- ⬭ argue that Wilson is one of the great U.S. presidents
- ⬭ survey the difference between Wilson, Taft, and Roosevelt
- ⬭ explain Wilson's concept of the New Freedom
- ⬭ discuss some major events of Wilson's career
- ⬭ suggest some reasons that Wilson's presidency may have started World War I

Test	Section	🕐		?	Answer	➡
Quit	Exit	Time		Help	Confirm	Next

By clicking the arrows in the scroll bar, you can move the information up or down by line. By clicking between an arrow and the box, you can move the information up or down the page in larger increments. Holding the mouse button down on an arrow makes the lines scroll very quickly.

The status bar indicates whether you are at the Beginning or End of a passage or whether there is More Available. These messages assist you in keeping track of where you are when you are scrolling.

If you are even slightly familiar with a Macintosh or Windows system, you should be very comfortable with the GRE computerized format.

Scratch Paper

Before you start the exam, you will receive scratch paper. It is important that you use this scratch paper to its maximum benefit. Doing mathematical computations, listing wrong answers, taking notes, and redrawing diagrams are some of the ways to take advantage of the scratch paper. The following sections discuss these and other strategies.

Test-Taking Strategies: The Approach

Don't Get Stuck

Many students who take standardized exams don't get the scores they are entitled to because they spend too much time dwelling on a single question, leaving insufficient time to answer other questions they could get right. Don't let this happen to you. Never spend more than a minute and a half on any one question. With sufficient practice, you will almost automatically know when a problem is taking too long. If that happens, try to eliminate some choices and then take a guess. *The key is not to get stuck!*

Eliminate Wrong Answers

Eliminate answer choices from consideration when possible. Because you can't mark on the computer screen, use your scratch paper to help you keep track of choices you've eliminated. You may wish to list answer choices and mark them out as follows. (Note that you could use markings A, B, C, D, and E only to signify the *order* of the choices, because no letters are used for choices on the screen.)

A̶
B
C̶
D
E̶

Or you may wish to be a little more sophisticated and use question marks to signify possible answers, as follows:

A̶
? B
C̶
? D
E̶

Either of these methods can help you avoid reconsidering those choices you already eliminated and help you narrow down your possible answers. Remember to keep this marking system very simple.

Working from Multiple–Multiple Choice Answers

You may encounter a few questions of the multiple–multiple choice type. This question gives you answers marked with roman numerals (I, II, III) and then asks you whether 1, 2, or possibly all 3 of the choices are correct answers. This type of question can appear as a multiple-choice math, reading comprehension, or logical or analytical reasoning question. Here's an example in the form of a multiple-choice math question:

1. Which of the following are equations with the only solution $x = 6$?

    I. $x^2 - 36 = 0$

    II. $x^2 - 7x + 6 = 0$

    III. $x + 5 = 3x - 7$

      A. I only

      B. II only

      C. III only

      D. I and III only

      E. I, II, and III

A good strategy for this question type is to try to answer one of the roman numeral choices quickly. On your scratch paper, write

<div align="center">

I
II
III
A
B
C
D
E

</div>

Then place a T or an F by the numeral (for True or False) and go the choices and eliminate possibilities. In the example, because I, $x^2 - 36 = 0$, gives you an answer of 6 and –6 ($x^2 = 36$ gives x = 6 or x = –6), it is false. Immediately place an F by roman numeral I and eliminate any answer choices that include I.

<div align="center">

F **I**
II
III
~~A~~
B
C
~~D~~
~~E~~

</div>

So now you know that the answer must be II or III, because you've eliminated choices A, D, and E because they contain I. You can now work either answer II or answer III, because only one of them can be true. Working II gives

$x^2 - 7x + 6 = 0$

$(x - 1)(x - 6) = 0$

$x - 1 = 0;\ x - 6 = 0$

$x = 1;\ x = 6$

So II is not true. Therefore, the answer must be III only. To finish the example, working III gives the following (although remember that there's no need to work it in the exam, because you've eliminated all the other answers).

$$x + 5 = 3x - 7$$
$$x + 5 = 3x - 7$$
$$\underline{ -5 -5}$$
$$x = 3x - 12$$
$$\underline{-3x -3x}$$
$$-2x = -12$$
$$\frac{-2x}{-2} = \frac{-12}{-2}$$
$$x = 6$$

So x = 6, and III and **C** are true.

Analysis of Exam Areas

This section is designed to introduce you to each GRE CBT area by carefully reviewing the

1. Ability Tested
2. Basic Skills Necessary
3. Directions
4. Analysis of Directions
5. Suggested Approach with Samples

This section features the patterned plan of attack for each subject area and important test-taking techniques and how to apply them to a variety of problem types. It also includes a list of math symbols, terms, and formulas. Three lists are also included to assist you in the verbal section: (1) a compact list of prefixes, suffixes, and roots for quick review; (2) a list of 300 words that have appeared on the GRE in the past to give you a sense of the level of vocabulary necessary to do well.

Note: On the actual GRE CBT, the letters A, B, C, D, and E do NOT appear with the answer choices, and the questions do not have numbers next to them. To select an answer, you will select the appropriate oval on the computer screen. Even though the actual test does not label the answer choices with letters, or the questions with numbers, letters and numbers are used in this book to assist you in following answers and explanations.

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INTRODUCTION TO THE VERBAL SECTION

Prior to starting the exam, you can carefully walk through a very basic tutorial program explaining how to use the computer for this exam. The computer-adaptive GRE gives you 30 minutes to answer 30 verbal ability questions. These questions are composed of Antonyms, Analogies, Sentence Completions, and Reading Comprehension. The question types are intermingled. You will receive a medium difficulty question to start with, and then the computer will adapt the level of questions you receive based on your responses to all the previous questions. You will do all your work on the scratch paper provided, and you will record all your answers on the computer screen by using a mouse to fill in the appropriate ovals. You can't go back to a previous question, so be sure to answer each question before you attempt to move to the next question.

The Verbal Section will generate a score from 200 to 800. Your score will be based on how well you do on the questions presented and also on the number of questions you answer. Try to pace yourself so that you have sufficient time to consider every question. If possible, answer all 30 questions in this section. Guess if you need to.

In this book—to assist you in understanding explanations and to direct your attention to different questions and answer choices—each question is given a number, and letters have been placed inside the ovals of the answer choices. **Note that on the actual exam, questions will not have numbers next to them and the ovals will not contain letters.**

Introduction to Antonyms

Ability Tested

The antonym questions test your vocabulary—your ability to understand the meanings of words and to distinguish between fine shades of meaning.

Basic Skills Necessary

This question type requires a strong college- or graduate-level vocabulary. A strong vocabulary cannot be developed instantly; it grows over a long period of time spent reading extensively and learning new words. Knowing the meanings of prefixes, suffixes, and roots will help you derive word meanings on the test.

Directions

Each word in CAPITAL LETTERS is followed by five words or phrases. The correct choice is the word or phrase whose meaning is most nearly opposite to the meaning of the word in capitals. You may be required to distinguish fine shades of meaning. Look at all choices before marking your answer.

Analysis of Directions

Although your choice may not be a *perfect* opposite, it must be the *most nearly opposite* of the five choices provided.

Consider all the choices, keeping in mind that in most cases two or three of the five choices can be quickly eliminated as clearly not opposite to the original word.

Occasionally, you may be uncertain as to the particular part of speech of a word. You can identify the part of speech of the root word by looking at the answer choices. For example: Suppose that the word in question is MINUTE. Is this the noun meaning *a unit of time equaling 60 seconds* (pronounced **min-**ut)? Or is it the adjective meaning *extremely small* (pronounced my-**noot**)? If the answer choices are all nouns, then the root word must also be a noun (indicating the former meaning of *minute*). If the answer choices are all adjectives, the root word is an adjective. All the answer choices in a particular question will represent the same part of speech. Scanning the answer choices can help you identify the part of speech of the root word.

Suggested Approach with Samples

You are looking for the best answer, which may not be an ideal answer — simply the best of the choices given.

Sample

1. WARMONGER

   A. offender
   B. coordinator
   C. instigator
   D. negotiator
   E. leader

A *warmonger* is one who *advocates war* or *seeks to bring war about*. The ideal answer or opposite would be *peacemaker*, but that is not one of the choices. The best answer is choice **D** *negotiator*, *one who tries to settle things or bring about a compromise*.

> **You should be able to immediately eliminate two or three of the choices because they are not even close or could not possibly relate to the original word.**

Sample

2. ALTER

   A. remember

   B. disrupt

   C. reorganize

   D. enjoy

   E. maintain

The word *alter* means to change. The closest opposite is choice **E** *maintain*. Notice that choice **A** *remember* and choice **D** *enjoy* do not relate to *alter* so are not possible answers. Choice **B** *disrupt* and choice **C** *reorganize* would be more in the synonym category.

> **Use the word in a short, clear sentence; try to think of how you've heard the word used before. You may discover a context for it that will help you make a choice.**

Sample

3. PATHOLOGICAL

   A. unsteady

   B. cured

   C. predictable

   D. stubborn

   E. selective

Sentence: "One of my friends is a *pathological* liar." Because *pathological* here refers to a negative characteristic, the correct choice is positive, **B.**

> **The prefix, root, and (sometimes) suffix of the original word may help you understand the meaning of the word and thus locate its opposite.**

Sample

---

4. DETACH

    A. separate

    B. fasten

    C. rid

    D. correct

    E. move

The prefix *de-* usually means *away from*. You may be familiar with the word *attach*, which means *to fasten* or *unite*. So *detach* means to *separate* or *unfasten*. The best opposite is choice **B** *fasten*.

Sample

---

5. SYNCHRONIZED

    A. timeless

    B. out of sorts

    C. out of step

    D. brought into accord

    E. chronological

The prefix *syn-* means *with* or *together*. The root *chron* refers to *time*. So *synchronized* means *occurring at the same time* or *occurring together*. The best opposite would be choice **C** *out of step*.

> **Sometimes the prefix of the original word may tip off a positive or negative connotation, which can help lead you to the correct answer.**

Sample

---

6. PROFUSION

- **A.** deficiency
- **B.** certainty
- **C.** proliferation
- **D.** largeness
- **E.** maximum

The prefix *pro-* has several meanings, and all of them have "positive" connotations; here, it means *forward*. Of the five choices, the prefix most opposite to the meaning of *pro-* is *de-*. The connotations of *de-* are usually "negative"; most often, it means *away from, off,* or *down*. *Profusion* means *abundance*, and *deficiency* refers to an *inadequacy* or *incompleteness*. The correct answer is **A**. Given these definitions, you can see that these two terms are the most nearly opposite of those given. However — even without your knowing the definitions — the prefixes, in this case, provide strong clues.

> **You may be able to detect whether a word is positive or negative in meaning without taking it apart. If the original word is positive, your choice must be negative, and vice versa.**

Sample

---

7. CHAOTIC

- **A.** hectic
- **B.** orderly
- **C.** embarrassing
- **D.** productive
- **E.** lengthy

Chaotic is a negative word that means *in a state of utter confusion* or *disorder*. You are now looking for a positive word. Choices **B** and **D** are the only positive words, so you have now narrowed your choices to two possibilities. Choice **B** *orderly* is the positive word that is the best opposite of utter confusion and disorder.

> **Pay special attention to the "strength" of a word. Is the word mild, moderate, or extreme? Do you get a "feeling" for the word when you read it?**

Sample

---

8. BOMBASTIC

    A. humble

    B. overbearing

    C. creative

    D. selfish

    E. astounded

Bombastic is a very strong word that means *boastful*. Notice that it simply sounds like a strong word. The best opposite here is choice **A** *humble*. The opposite of a loud *boastful* person is a quiet *humble* person.

Sample

---

9. MELLIFLUOUS

    A. melodious

    B. unpleasant

    C. spiritual

    D. soothing

    E. indefinite

The word *mellifluous* seems to have a pleasant sound and does in fact mean *pleasant, melodious,* or *sweet*. The best opposite would be choice **B** *unpleasant.*

Sample

---

10. GHASTLY

    A. stupendous

    B. infectious

    C. lovely

    D. acceptable

    E. standard

Ghastly is a strongly negative word. Although choice **D** *acceptable* is a positive word, and therefore opposite to *ghastly,* choice **C** *lovely* is a better choice. *Lovely* is a stronger positive word than *acceptable* and therefore opposes the strongly negative meaning of *ghastly*.

Don't choose an antonym that is too broad or too limited to be an opposite.

Sample

> **11.** GARRULOUS
>
>   **A.** edited
>
>   **B.** not talkative
>
>   **C.** censored
>
>   **D.** narrow-minded
>
>   **E.** unyielding

Garrulous means *talking too much*. Although choices **A**, **C**, **D**, and **E** are all partial opposites because they contain the idea of restricting language, only **B** *not talkative* specifically refers to speech.

Working from the answer choices, eliminating similar choices, and looking for the choice that "stands out" can be useful.

Sample

> **12.** DILAPIDATED
>
>   **A.** ruined
>
>   **B.** condemned
>
>   **C.** renovated
>
>   **D.** destroyed
>
>   **E.** shabby

Assessing the choices, you could have eliminated choices **A** *ruined* and **D** *destroyed* because they are really identical answers. Also notice that only choice **C** *renovated* is clearly not a negative word; thus it "stands out" among the other choices. In this case, *renovated (made good as new)* is the opposite of *dilapidated,* which means *falling apart*.

A PATTERNED PLAN OF ATTACK

Read the word, remembering you are looking for the most nearly opposite.

↓

You are looking for the best answer, which may not be an ideal answer, simply the best of the choices given.

↓

Try to immediately eliminate two or three choices that are not close to or could not possibly relate to the original word.

↓

Put the word in a short clean sentence; try to think of how you've heard the word used before. You may discover a context for it that will help you make a choice.

↓

If the word is unfamiliar to you, break the word up using your knowledge of prefixes, roots, and suffixes.

↓

Sometimes the prefix of the original word may tip off a positive or negative connotation that can lead you to the best opposite.

↓

You may be able to determine a positive or negative connotation from the word as a whole.

↓

Remember, if the original word has a positive connotation, its antonym is negative, and vice versa.

↓

Pay special attention to the "strength" of a word. Is the word mild, moderate, or extreme?

↓

Your answer should not be too broad or too limited to be an opposite.

↓

A reminder: If you are uncertain of the part of speech of the original word, look at the answer choices because they will be the same part of speech (verb, noun, adjective, and so on).

A Short List of Common Prefixes, Suffixes, and Roots

The following abbreviated list should help you arrive at the definitions of unfamiliar words on the Verbal Section of the GRE. These prefixes, suffixes, and roots apply to thousands of words.

Prefixes		
Prefix	*Meaning*	*Example*
pre-	before	precede
de-	away, from	deter
inter-	between	interstate
ob-	against	objection
in-	into	instruct
mono-	alone, one	monolith
epi-	upon	epilogue
mis-	wrong	mistake
sub-	under	submarine
trans-	across, beyond	transcend
over-	above	overbearing
ad-	to, toward	advance
non-	not	nonentity
com-	together, with	composite
re-	back, again	regress
ex-	out of	expel
in-	not	insufficient
pro-	forward	propel
anti-	against	antidote
omni-	all, everywhere	omniscient
equi-	equal, equally	equivalent
homo-	same, equal, like	homogenized
semi-	half, partly	semicircle
un-	not	unneeded
bi-	two	bicycle
poly-	many	polymorphous
retro-	backward	retrograde
mal-	bad	malfunction
hyper-	over, too much	hyperactive
hypo-	under, too little	hypodermic

Suffixes		
Suffix	*Meaning*	*Example*
-able, -ible	able to	usable
-er, -or	one who does	competitor
-ism	the practice of	rationalism
-ist	one who is occupied with	feminist
-less	without, lacking	meaningless
-ship	the art or skill of	statesmanship
-fy	to make	dignify
-ness	the quality of	aggressiveness
-tude	the state of	rectitude
-logue	a particular kind of speaking or writing	prologue

Roots		
Root	*Meaning*	*Example*
arch	to rule	monarch
belli	war, warlike	belligerent
bene	good	benevolent
chron	time	chronology
dic	to say	indicative
fac	to make, to do	artifact
graph	writing	telegraph
mort	to die	mortal
port	to carry	deport
vid, vis	to see	invisible

Antonym Practice Questions

Easy to Moderate

1. PROCEED

    A. secede

    B. succeed

    C. impede

    D. lead

    E. recede

2. ELEVATED

    A. grounded

    B. raised

    C. excited

    D. subterranean

    E. moody

3. ELOQUENT

    A. lucid

    B. ministerial

    C. wise

    D. graceful

    E. inarticulate

4. SCRUTINIZE

    A. skim

    B. devour

    C. elaborate

    D. comprehend

    E. question

5. INFIRM

    A. ailing

    B. hospitalized

    C. robust

    D. recovering

    E. firm

6. REDUNDANT

    A. verbose

    B. irrelevant

    C. prosaic

    D. excessive

    E. insufficient

7. RESILIENT

    A. elastic

    B. resinous

    C. resolute

    D. inflexible

    E. malleable

8. INANE

    A. foolish

    B. serious

    C. mature

    D. nameless

    E. contrary

9. CONFIDANT

    A. assurance

    B. acquaintance

    C. enemy

    D. confession

    E. ally

10. OVERWROUGHT

    A. relaxed

    B. restrained

    C. underutilized

    D. flawed

    E. underestimated

11. CHIVALROUS

    A. gallant

    B. discourteous

    C. civilized

    D. armored

    E. vainglorious

12. MODERATE

    A. calm

    B. reason

    C. whisper

    D. intensify

    E. lead

13. AFFECTION

    A. love

    B. aversion

    C. disaffection

    D. purity

    E. effect

14. EUPHORIA

    A. mandate

    B. intoxicant

    C. life

    D. euthanasia

    E. gloom

15. DISPARATE

    A. dissimilar

    B. similar

    C. disconcerted

    D. contrite

    E. desperate

16. INFAMOUS

    A. eager for praise

    B. criminal

    C. with a good reputation

    D. heinous

    E. appearing often

17. MANDATORY

- **A.** dispassionate
- **B.** obligatory
- **C.** voluntary
- **D.** inveterate
- **E.** disconsolate

18. DOWDY

- **A.** slovenly
- **B.** out of date
- **C.** stylish
- **D.** above average
- **E.** seasonal

19. EMPATHY

- **A.** compassion
- **B.** lack of feeling for others
- **C.** lack of religious certainty
- **D.** lack of credit
- **E.** recalcitrance

20. TRAVAIL

- **A.** fetters
- **B.** repose
- **C.** smear
- **D.** illumination
- **E.** remainder

21. BOMB

- **A.** inception
- **B.** task
- **C.** divot
- **D.** storm
- **E.** hit

Average

22. DISCRIMINATING

- **A.** racist
- **B.** gourmet
- **C.** crass
- **D.** popular
- **E.** segregated

23. IRONIC

- **A.** literary
- **B.** figurative
- **C.** analogous
- **D.** mysterious
- **E.** literal

24. PROFUSE

- **A.** extravagant
- **B.** antinatural
- **C.** immodest
- **D.** sparse
- **E.** refutable

25. IRASCIBLE

- **A.** iridescent
- **B.** cooperative
- **C.** irregular
- **D.** commensurate
- **E.** devilish

26. PALPABLE

    A. pliable

    B. facetious

    C. evident

    D. intangible

    E. careful

27. MATRICULATE

    A. articulate

    B. speculate

    C. divorce

    D. impart

    E. graduate

28. NADIR

    A. ebb tide

    B. positron

    C. mean

    D. median

    E. zenith

29. PROFUNDITY

    A. depth

    B. shallowness

    C. profanity

    D. perfidy

    E. complexity

30. INTERCEDE

    A. intercept

    B. disrupt

    C. supersede

    D. intervene

    E. question

31. ENIGMATIC

    A. explicit

    B. cryptic

    C. implicit

    D. syntactic

    E. impolitic

32. EXHUME

    A. expel

    B. exit

    C. infer

    D. refer

    E. inter

33. NOVEL

    A. fictional

    B. poetic

    C. ordinary

    D. narrative

    E. peerless

34. RECONDITE

  A. obvious

  B. plane

  C. fit

  D. cryptic

  E. cabalistic

35. PRETERNATURAL

  A. customary

  B. naturalistic

  C. adventitious

  D. unnatural

  E. pernicious

36. ORNERY

  A. with many faults

  B. odorless

  C. agreeable in disposition

  D. fetid

  E. highly decorated

37. SUCCULENT

  A. harshly astringent

  B. axiomatic

  C. quietly reclusive

  D. parched

  E. highly spiced

38. PRECURSOR

  A. sequel

  B. pointer

  C. tyro

  D. claimant

  E. afterthought

39. NEBULOUS

  A. astronomical

  B. distinct

  C. eccentric

  D. hopeful

  E. moribund

40. ALTRUISTIC

  A. selfish

  B. below sea level

  C. interdisciplinary

  D. nonalcoholic

  E. self-reliant

41. TACITLY

  A. thoughtlessly

  B. carelessly

  C. coherently

  D. openly expressed

  E. mildly amused

42. INDIGENT

    A. inconsequential

    B. nonnative

    C. extraterrestrial

    D. affluent

    E. compliant

43. FERVOR

    A. an unfortified place

    B. patriotism

    C. drollery

    D. merrymaking

    E. nonchalance

44. TRUMPET

    A. fetch

    B. glut

    C. hone

    D. idle

    E. veil

45. FERVENT

    A. intermittent

    B. parietal

    C. bland

    D. resonant

    E. sublime

46. PURITANIC

    A. controlled by hand

    B. making fast

    C. imposing

    D. freewheeling

    E. obtuse

47. CAPTIOUS

    A. eager

    B. deprived

    C. indulgent

    D. free

    E. anxious

Above Average to Difficult

48. APPROBATION

    A. probation

    B. guilt

    C. disapproval

    D. disavowal

    E. disaffected

49. HERETICAL

    A. skeptical

    B. orthodox

    C. unorthodox

    D. ethereal

    E. insincere

50. LABYRINTHINE

    A. flowery

    B. direct

    C. amazing

    D. dark

    E. towering

51. HIDEBOUND

    A. liberal

    B. dishonorable

    C. honorable

    D. conservative

    E. leathery

52. IMBROGLIO

    A. imbibition

    B. proviso

    C. fracas

    D. clarification

    E. settlement

53. UBIQUITOUS

    A. obsequious

    B. cantankerous

    C. rare

    D. intermittent

    E. omnivorous

54. PALLID

    A. resplendent

    B. lackluster

    C. enervated

    D. impaled

    E. impervious

55. ABSTEMIOUS

    A. self-indulgent

    B. on the dole

    C. self-sacrificing

    D. off the mark

    E. self-satisfied

56. HUGGER-MUGGER

    A. incarcerate

    B. eat heartily

    C. dance wildly

    D. keep watch

    E. publicize

57. INVEIGH

    A. to lose weight

    B. to estimate

    C. to accept meekly

    D. to cherish fondly

    E. to retreat

58. LOUCHE

    A. inflexible

    B. manifest

    C. reputable

    D. wolflike

    E. gloomy

59. KUDOS

    A. reward

    B. regrets

    C. obloquy

    D. freedom

    E. glorification

60. PUNGENT

    A. acrid

    B. piquant

    C. harmonious

    D. untenable

    E. insipid

Answers and Explanations for the Practice Antonyms

Easy to Moderate

1. **E. recede.** *Proceed* means move forward, go ahead as planned. Choice **E** *recede* means to move backward. Choice **A** *secede* means to withdraw or quit. Choice **C** *impede* means to slow down.

2. **D. subterranean.** *Elevated* means above the ground. Choice **A** *grounded* means connected to the earth. Choice **D** *subterranean* means beneath the surface.

3. **E. inarticulate.** *Eloquent* means articulate. Choice **A** *lucid* means clear. Choice **B** *ministerial* pertains to a minister. Choice **E** *inarticulate* means not eloquent.

4. **A. skim.** *Scrutinize* means to examine something thoroughly and carefully. Choice **A** *skim* means to glance at or read quickly. Choice **B** *devour* means to hungrily or greedily consume.

5. **C. robust.** *Infirm* means weak, especially from illness or old age. Choice **C** *robust* means very healthy.

6. **E. insufficient.** *Redundant* means superfluous, extra, unneeded. Choice **A** *verbose* means using too many words. Choice **C** *prosaic* means dull or ordinary. Choice **E** *insufficient* means not enough.

7. **D. inflexible.** *Resilient* means elastic, easily regaining its original shape. Choice **B** *resinous* means composed of resins (particular kinds of particles). Choice **C** *resolute* means determined. Choice **D** *inflexible* means stiff or rigid. Choice **E** *malleable* means moldable or flexible.

8. **B. serious.** *Inane* means silly or empty. Choice **B** *serious* means important or solemn.

9. **C. enemy.** *Confidant* means a friend, a person you can confide in. Choice **C** *enemy* is the opposite of friend.

10. **A. relaxed.** *Overwrought* means overcome by nervous agitation or being overexcited. Choice **A** *relaxed* means an absence of tension or tightness.

11. **B. discourteous.** *Chivalrous* means positive or high-minded. Choice **A** *gallant* means brave or courageous. Choice **B** *discourteous* means not courteous. Choice **E** *vainglorious* means marked by excessive pride and vanity.

12. **D. intensify.** *Moderate* means to make less intense. Choice **D** *intensify* means to make more intense.

13. **B. aversion.** *Affection* means love or liking. Choice **B** *aversion* means strong dislike. Choice **C** *disaffection* means alienation or resentment. Choice **D** *purity* means cleanness, freedom from physical or moral pollution.

14. **E. gloom.** *Euphoria* means a feeling of well-being or elation. Choice **A** *mandate* means an order or command. Choice **B** *intoxicant* means a mind-altering substance. Choice **D** *euthanasia* means mercy killing. Choice **E** *gloom* means sadness or depression.

15. **B. similar.** *Disparate* means different. Choice **A** *dissimilar* means different. Choice **B** *similar* means the same or nearly the same. Choice **C** *disconcerted* means bewildered or confused. Choice **D** *contrite* means repentant.

16. **C. with a good reputation.** *Infamous* means having a bad reputation. The adjective *heinous*, choice **D**, means evil, abominable.

17. **C. voluntary.** *Mandatory* means obligatory, ordered. Choice **A** *dispassionate* means impartial. Choice **D** *inveterate* means deep-seated. Choice **E** *disconsolate* means cheerless, unhappy.

18. **C. stylish.** *Dowdy* means drab or out of date. Choice **A** *slovenly* means untidy.

19. **B. lack of feeling for others.** *Empathy* means feeling for others, sympathy. Choice **E** *recalcitrance* means disobedience, noncompliance.

20. **B. repose.** The noun *travail* means toil, hard labor; its opposite here is *repose,* which means to rest.

21. **E. hit.** A *bomb* is American theater terminology for a failure, the opposite of *hit*.

Average

22. **C. crass.** *Discriminating* means being able to make fine distinctions. Choice **C** *crass* means gross, being unable to make fine distinctions.

23. **E. literal.** *Ironic* means using words to express the opposite of their literal meaning. Choice **B** *figurative* means metaphoric, a kind of literary comparison. Choice **C** *analogous* means a resemblance between two things that are otherwise unlike. Choice **E** *literal* means exact or verbatim.

24. **D. sparse.** *Profuse* means lavish, lush, or abundant. Choice **A** *extravagant* means going beyond what is reasonable. Choice **B** *antinatural* means against nature. Choice **C** *immodest* means lacking in modesty or indecent. Choice **D** *sparse* means not thickly grown. Choice **E** *refutable* means able to be proved wrong.

25. **B. cooperative.** *Irascible* means quarrelsome or hot-tempered. Choice **A** *iridescent* means giving off a rainbow glow. Choice **B** *cooperative* means agreeable or easygoing. Choice **D** *commensurate* means proportionate. Choice **E** *devilish* means evil or sinister.

26. **D. intangible.** *Palpable* means easily perceived, obvious, tangible. Choice **A** *pliable* means flexible, easily influenced. Choice **B** *facetious* means intending to be funny. Choice **D** *intangible* means not tangible.

27. **E. graduate.** *Matriculate* means to sign up, to register for or join, especially for college. Choice **A** *articulate* means to express ideas clearly. Choice **B** *speculate* means to form opinions without definite knowledge. Choice **E** *graduate* means to be awarded a diploma for a course of study or to conclude school successfully.

28. **E. zenith.** *Nadir* is the bottom, the lowest point. Choice **A** *ebb tide* means a period or state of decline. Choice **B** *positron* means an electrically charged particle. Choice **C** *mean* means the average. Choice **D** *median* means the middle point. Choice **E** *zenith* means topmost or highest point.

29. **B. shallowness.** *Profundity* means having great depth of understanding or importance. Choice **B** *shallowness* means not deep, or an incapability of having deep feelings. Choice **C** *profanity* means coarse or irreverent speech. Choice **D** *perfidy* means treachery.

30. **B. disrupt.** *Intercede* means to mediate, to help two sides reach an agreement. Choice **A** *intercept* means to take something away. Choice **B** *disrupt* means to push apart. Choice **C** *supersede* means to replace or overrule. Choice **D** *intervene* means to intercede.

31. **A. explicit.** *Enigmatic* means puzzling, unclear, obscure. *Explicit* means clear and direct. *Cryptic* means puzzling. *Implicit* means indirect. *Syntactic* means having to do with sentence structure. *Impolitic* means unwise.

32. **E. inter.** *Exhume* means to remove from the grave. *Expel* means to force out, eject. *Exit* means to depart. *Infer* means to conclude or deduce. *Refer* means to relate. *Inter* means to bury a dead body.

33. C. ordinary. *Novel* means new or unique. *Fictional* means made up or fabricated. *Poetic* means elegant or musical. *Ordinary* means common or everyday. *Narrative* means related to a story. *Peerless* means unique.

34. A. obvious. *Recondite* means mystical or profound. *Obvious* means apparent. *Plane* means flat. *Fit* means trim. *Ambiguous* means cryptic. *Cabalistic* means abstruse or incomprehensible.

35. A. customary. *Preternatural* means extraordinary. *Customary* means normal or regular. *Naturalistic* means based on natural desires or events. *Adventitious* means fortuitous. *Unnatural* means artificial or abnormal. *Pernicious* means harmful or wicked.

36. C. agreeable in disposition. *Ornery* means disagreeable, mean, crotchety. The adjective *fetid*, choice **D**, means noisome, stinking.

37. D. parched. *Succulent* means full of juice, juicy. Choice **D** *parched* means dried out. Choice **B** *axiomatic* means self-evident.

38. A. sequel. A *precursor* is a thing or person that precedes, but a *sequel,* choice **A**, is something that comes after. A *tyro*, choice **C**, is a novice or beginner. A *claimant*, choice **D**, is one who makes a claim.

39. B. distinct. *Nebulous* means vague or hazy. Choice **B** *distinct* means clear, single, particular, or discrete. The adjective *moribund*, choice **E**, means dying.

40. A. selfish. *Altruistic* means benevolent, generous, or unselfishly concerned for others. Choice **A** is the best opposite.

41. D. openly expressed. *Tacitly* means silently, without being openly expressed.

42. D. affluent. *Indigent* means needy, poor. Choice **D** *affluent* means rich, wealthy, or prosperous. Choice **E** *compliant* means obliging.

43. E. nonchalance. *Fervor* means zeal or warmth of feeling, and choice **E** *nonchalance* is cool indifference. Choice **C** *drollery* is something amusing.

44. E. veil. The verb *trumpet* means to announce loudly, to proclaim. The opposite is *veil,* which means to cover or conceal.

45. C. bland. The adjective *fervent* means ardent, intensely felt, the opposite of *bland,* which means dull or tasteless. Choice **A** *intermittent* means periodic or recurrent. Choice **B** *parietal* means pertaining to a wall. Choice **D** *resonant* means resounding or vibrant. Choice **E** *sublime* means elevated, outstanding, or lofty.

46. D. freewheeling. The adjective *puritanic* means excessively strict in morals. The most nearly opposite choice here is choice **D** *freewheeling*. Choice **E** *obtuse* means dull-witted, dense, or ignorant.

47. C. indulgent. *Captious* means quick to find fault, carping. The opposite is *indulgent*.

Above Average to Difficult

48. **C. disapproval.** *Approbation* means approval. Choice **A** *probation* is a period of time for examination or evaluation. Choice **C** *disapproval* means objection, and is the opposite of *approbation.* Choice **D** *disavowal* means a denial of responsibility. Choice **E** *disaffection* means discontent.

49. **B. orthodox.** *Heretical* means challenging conventional beliefs. Choice **A** s*keptical* means inclined not to believe. Choice **B** *orthodox* means to accept conventional beliefs. Choice **C** *unorthodox* means unconventional. Choice **D** *ethereal* means light and delicate or heavenly. Choice **E** *insincere* means hypocritical, not sincere.

50. **B. direct.** *Labyrinthine* means mazelike. The best opposite is *direct,* which means straightforward.

51. **A. liberal.** *Hidebound* means narrow-minded. Choice **A** *liberal* means open-minded.

52. **E. settlement.** *Imbroglio* means a noisy fight or a dispute. Choice **E** *settlement* is the best opposite. Choice **A** *imbibition* means to absorb ideas into the mind. Choice **B** *proviso* means something insisted on as part of an agreement, with each side giving up some of its demands. Choice **C** *fracas* is also a noisy dispute or brawl.

53. **C. rare.** *Ubiquitous* means omnipresent, everywhere. Choice **A** *obsequious* means excessively or sickeningly respectful. Choice **B** *cantankerous* means bad-tempered. Choice **C** *rare* means seldom found or occurring. Choice **D** *intermittent* means occurring at intervals, not continuous. Choice **E** *omnivorous* means feeding on both plants and animal flesh.

54. **A. resplendent.** *Pallid* means drab or colorless. Choice **A** *resplendent* means bright or brilliant. Choice **B** *lackluster* means drab or colorless. Choice **C** *enervated* means frail or feeble. Choice **D** *impaled* means pierced. Choice **E** *impervious* means impenetrable.

55. **A. self-indulgent.** *Abstemious* means self-denying, temperate.

56. **E. publicize.** As a verb, *hugger-mugger* means to hush up. Choice **E** *publicize* means to announce, promote, or advertise. To *incarcerate,* choice **A**, is to imprison.

57. **C. to accept meekly.** To *inveigh* is to protest strongly, to rail against. The opposite is choice **C** *to accept meekly*.

58. **C. reputable.** *Louche* means shady, disreputable. Choice **B** *manifest* means evident. Choice **C** *reputable* means having a good reputation.

59. **C. obloquy.** *Kudos* is a singular noun meaning glory, fame, or prestige. The opposite of *kudos* is *obloquy*, which means disgrace, discredit, or dishonor.

60. **E. insipid.** *Pungent* means sharply affecting the organs of taste, or a strong sour or bitter taste. Choice **E** *insipid* means tasteless. Choices **A** and **B** are synonyms of pungent. Choice **D** *untenable* means implausible or unreasonable.

Introduction to Analogies

Ability Tested

The analogy questions test your ability to understand logical relationships between pairs of words. Your vocabulary—your ability to understand the meanings of words—is also tested.

Basic Skills Necessary

The basic skills necessary for these questions are, once again, a strong college- or graduate-level vocabulary and the ability to distinguish similarities and differences between words or ideas.

Directions

In the following questions, you are given a related pair of words or phrases. From the choices that follow, select the pair that best expresses a relationship similar to that of the original pair of words.

Analysis

Focus on understanding the relationship between the original pair of words because that relationship is what you are trying to parallel.

Notice that you are to select the *best* answer or most similar relationship; therefore, the correct answer may not be exactly parallel.

The use of the word *best* also implies that there may be more than one good answer.

Suggested Approach with Samples

Make sure that you know what both words in the first pair mean. A simple word such as *run* may be a noun or a verb. As a noun, it may mean the act of running, or a score in a baseball game, or a flaw in panty hose. As a verb, it may be intransitive (without an object) and mean to move rapidly—to run in a race. Or it may be transitive (taking an object) and mean to control or direct—to run a business.

> **To determine which parts of speech the words in the original pair are, look at the five answer choices. All the choices will be the same parts of speech as the original pair. So if you're not sure about a word in the first pair, the words in the choices will tell you what parts of speech are being used.**

Sample

---

1. BOARDS : ROWBOAT ::

   A. disembarks : airplane

   B. enters : account book

   C. gets on : bus

   D. refuses : time

   E. hopes : fear

The word *boards* may be a verb meaning gets into or a noun describing the lumber from which *rowboats* are constructed. The best answer is **C**. The choices make clear that *boards* is a verb. The relationship between *boards* and *rowboat* is the same as the relationship between *gets on* and *bus*.

> **Construct a sentence relating the two words. To help determine the relationship between the two words in the original pair, construct a sentence (using the words) that explains how the two words are related. Then use almost the same sentence replacing the original words with the answer choices.**

Sample

---

2. RECIPE : COOKBOOK ::

   A. letter : secretary

   B. formula : chemist

   C. blueprint : building

   D. map : atlas

   E. prescription : pharmacy

The best answer is **D**. The sentence you could have used is "A *recipe* is found in a *cookbook*." You could then have tried each of the choices. **A** a *letter* is found in a *secretary*. No, that's incorrect. **B** a *formula* is found in a *chemist*. No, that's incorrect. **C** a *blueprint* is found in a *building*. Possibly, but not usually. **D** a *map* is found in an *atlas*. Absolutely! **E** a *prescription* is found in a *pharmacy*. Possibly, but not necessarily. Another, possibly better, sentence is "A *recipe* is contained in a *cookbook*" and "A *map* is contained in an *atlas*."

Notice how constructing a sentence relating the two words can be really help-
ful in solving an analogy. The actual analogy can be stated as follows: *"Recipe
is to cookbook in the same way as map is to atlas."* The standard analogy sen-
tence is "A is to B in the same way as C is to D."

Sample

> **3.** SONNET : LITERATURE ::
>
>   **A.**   rhythm : poetry
>
>   **B.**   football : sport
>
>   **C.**   dancing : ballet
>
>   **D.**   research : biology
>
>   **E.**   acting : actor

The best answer is **B**. In this case, you might say to yourself, "A *sonnet* is a type
of *literature*" and therefore recognize that the relationship is between an example
and the larger category. Now, doing the same thing with the answer choices, you
will find that the correct answer, **B**, shows the same relationship. *Football* is a
type of *sport*. This sentence can be expressed as "*Sonnet* is to *literature* in the
same way as *football* is to *sport*."

Sample

> **4.** ANONYMOUS : NAME ::
>
>   **A.**   careful : measurement
>
>   **B.**   quick : importance
>
>   **C.**   formless : shape
>
>   **D.**   large : body
>
>   **E.**   colorful : hue

The best choice is **C**. Your sentence should go something like this: "An *anony-
mous* person or thing is lacking a *name*." Choice **C** is best because it correctly
completes the sentence: "*Anonymous* describes the lack of a *name* in the same
way as *formless* describes the lack of *shape*."

**Remember the standard analogy sentence: "A is to B in the same way as C is
to D."**

Try to make your sentence as specific as possible. Because some of the choices
may be generally the same, make your sentence as precise as you can. If your
sentence isn't specific enough, more than one answer choice may seem good.

Sample

---

5. HAND : MAN ::

  A.   tail : dog

  B.   paw : cat

  C.   bumper : car

  D.   rain : umbrella

  E.   head : hat

The best choice is **B**. Using the sentence "*Hand* is a part of a *man*" eliminates choices **D** and **E**, but is not specific enough to get the right answer. Choice **A** "*Tail* is a part of a *dog*," choice **B** "*Paw* is a part of a *cat*," and choice **C** "*Bumper* is a part of a *car*," are all possibilities with this general sentence. But if you make the sentence more specific, such as: "*Hand* is a part of a *man* that is used for grasping," then choices **A** and **C** can be eliminated.

Sample

---

6. ORATORY : COMMUNICATION ::

  A.   key : ignition

  B.   concept : paragraph

  C.   dancing : recreation

  D.   stalling : conversation

  E.   cursing : crime

In this case, you may say to yourself, "*Oratory* is a specific kind of *communication*" and thus recognize that the relationship here is between specific and general. This strategy eliminates all the choices except **C** and **E**. A more precise or specific sentence that would lead you to the best answer is, "*Oratory* is always a specific and typical kind of *communication*." Is choice **E** *cursing* always a specific and typical kind of *crime*? No. Is choice **C** *dancing* always a specific and typical kind of *recreation*? Yes. Notice that cursing is not necessarily a crime. Dancing is necessarily a recreation. Therefore, **C** is the best choice.

> **Remember that making a clear and specific sentence showing the relationship between the first two words usually eliminates wrong answers and leads you to the best choice.**

Be sure to keep the order of the first pair the same as the order of your answer. A wrong answer may present a correct relationship, but in the wrong order.

Sample

> **7.** HEADACHE : ASPIRIN ::
>
> **A.** insect : insecticide
>
> **B.** allergy : ragweed
>
> **C.** quinine : malaria
>
> **D.** infection : antibiotic
>
> **E.** poison : toxin

The best choice is **D**. A *headache* may be cured by an *aspirin*, and an *infection* may be cured by an *antibiotic*. Though *quinine* is taken to prevent or to reduce the symptoms of *malaria*, the order of the two terms reverses that of the original pair. Remember that maintaining the order given in your original sentence "a *headache* may be cured by an *aspirin*" is key.

Sample

> **8.** SLEEPER : SMOKE ALARM ::
>
> **A.** snake : hiss
>
> **B.** air raid : siren
>
> **C.** car horn : driver
>
> **D.** sailor : lighthouse
>
> **E.** crossing : bell

The best choice is **D**. A *sleeper* is warned by a *smoke alarm* in the same way as a *sailor* is warned by a *lighthouse*. Choice **C** is incorrect because the order is reversed.

> **Sometimes, it is easier to make up a sentence using the original words in reverse order. Remember in this case to reverse the order of the words in the choices when you try them in your sentence. In essence, you are starting your sentence with the second word first on the original and on all the choices.**

Sample

---

9. ARROW : QUIVER ::

    A. actress : applause

    B. garage : car

    C. editorial : newspaper

    D. pistol : holster

    E. dirt : shovel

The best choice is **D**. A *quiver* is a case for holding an *arrow*; the closest parallel is *holster*, which is the case that holds a *pistol*. Notice that, in this situation, it is probably easier to make a sentence starting from the second word. Just remember that each of your sentences for this question must then be consistent and start from the second word.

> **Often, you will need to consider not only the primary relationship between the original words, but also a secondary relationship.**

Sample

---

10. PERJURY : TRUTH ::

    A. attorney : client

    B. treason : loyalty

    C. courage : cowardice

    D. sorcery : witchcraft

    E. patience : indecision

Perjury is the opposite of *truth*. This sentence shows that the primary relationship between the original words is one of opposites.

Beyond this primary relationship, you must consider secondary relationships. First, notice that *perjury* is an *unlawful* act. Second, notice that, considering more specifically the relationship of *perjury* to *truth*, you may conclude that *perjury* is a *violation* of *truth*. Scanning the answer choices, you see that *treason* is the opposite of *loyalty* and that *courage* is the opposite of *cowardice*. However, only choice **B** presents a relationship in which the first term is an *unlawful* act and in which the first term is a *violation* of the second. Thus, taking the secondary relationships of the original pair fully into account, you should conclude that **B** is the best choice.

Sample

---

11. FINE : SPEEDING ::

    A. watch : retiring

    B. certificate : achieving

    C. key : unlocking

    D. payment : working

    E. penalty : fouling

The best choice is **E**. "*Speeding* can cause you to get a *fine.*" This sentence tells you that the original relationship is between two actions. The primary relationship is that the second action causes the first. Choices **A**, "*retiring* can cause you to get a *watch*," **B**, "*achieving* can cause you to get a *certificate*," and **D**, "*working* can cause you to get a *payment*," are all second actions that could ultimately cause the first action. But the secondary relationship to consider is that *speeding* is *illegal* and is *punishable* by a *fine.* This secondary relationship helps you focus on the important specifics needed for the right answer: choice **E**, "*fouling* can cause you to get a *penalty*," and "*fouling* is *illegal* by the governing rules and is *punishable* by a *penalty.*"

Sample

---

12. VANDALIZE : PROPERTY ::

    A. judge : murderer

    B. criticize : creativity

    C. incinerate : combustibles

    D. slander : reputation

    E. courage : villainy

The best choice is **D**. "To *vandalize* is to destroy *property.*" This sentence tells you that the original relationship is between an action and its object: *Property* is the object of vandalism. Beyond this primary relationship, you must consider secondary relationships. First, notice that destruction is the object of vandalism. Second, notice that it is unlawful destruction. Scanning the choices, you see that to *judge* can destroy (condemn to death) a *murderer*; to *criticize* can destroy (by discouraging) *creativity*; and *courage* can (under certain conditions) destroy *villainy*. But in none of these choices—**A**, **B**, or **E**—is the relationship between the terms typically or necessarily one of destruction. In choice **C**, to *incinerate* necessarily destroys *combustibles* (flammable objects); and in choice **D**, *slander* typically destroys *reputation*. So both of these are possible choices. However, only

one of them refers to a typically unlawful act as well, choice **D**. Thus, taking the secondary relationships of the original pair fully into account, you should conclude that **D** is the best choice.

> **Watch the "level" of each word. Carefully examine each word; if you have trouble with the meaning, try to notice or identify the "level" of one or both of the words. Is one word extreme, harsh, gentle, or pleasant?**

Sample

---
13. LOUD : BLARING ::

    A. impotent : potent

    B. tepid : warm

    C. surprising : shocking

    D. cool : calm

    E. noise : quiet

The best choice is **C**. Even if you didn't know the meaning of the second word, *blaring*, and therefore couldn't make a sentence, you could still get the right answer. Notice that *blaring* is a harsh or extreme word. The only second word that is harsh or extreme is *shocking. Blaring* is the extreme of *loud* in the same way that *shocking* is the extreme of *surprising.* So if you didn't know the relationship between the original words, or even the meaning of the words, you could get the right answer by using this strategy to make an educated guess.

> **Remember that your choice does not have to come from the same category, class, or type as the original pair of words. You are looking for a pair of words that have the same *relationship*.**

Sample

---
14. TASTING : EATING ::

    A. skimming : reading

    B. cooking : cleaning

    C. singing : dining

    D. baking : broiling

    E. laughing : smiling

The best choice is **A**. Notice that the original pair of words, *tasting* and *eating,* are from the category of food, and notice that three of the choices, **B**, **C**, and **D**, have words from the same category. But you are looking for the words that have the same *relationship* as the original pair, not words from the same category. *Tasting* is to *eat* or drink in small quantities, lightly. *Skimming* is to *read* in small quantities, lightly and swiftly. Even though *skimming* and *reading* are from the category of books and reading, this pair has the closest relationship to the original pair and is the best answer.

Use this effective approach to analogies:

1. Determine the relationship between the original pair of words by using them in a clear, specific sentence.

2. Narrow your choices to pairs that typically or necessarily express a similar relationship.

3. Choose the pair that expresses the original relationship most precisely by taking into account the secondary relationship(s) between the words in the original pair.

Some Types of Relationships

The more practice you have working on analogy problems, the more quickly you'll recognize some of the common relationships. Some relationships are given below. There are many other possibilities as well.

CLASSIFICATIONS: sorts, kinds, general to specific, specific to general, thing to quality or characteristic, opposites, degree, and so on.

A broad category is paired with a narrower category.

RODENT :	SQUIRREL ::	fish :	flounder
(broad category)	(narrower category)	(broad category)	(narrower category)

A person is paired with a characteristic.

GIANT :	BIGNESS ::	baby :	helplessness
(person)	(characteristic)	(person)	(characteristic)

The general is paired with the specific.

PERSON :	BOY ::	vehicle :	bus
(general)	(specific)	(general)	(specific)

A word is paired with a synonym of itself.

VACUOUS :	EMPTY ::	seemly :	fit
(word)	(synonym)	(word)	(synonym)

A word is paired with an antonym of itself.

SLAVE :	FREEMAN ::	desolate :	joyous
(word)	(antonym)	(word)	(antonym)

A word is paired with a definition of itself.

ASSEVERATE:	AFFIRM ::	segregate :	separate
(word)	(definition)	(word)	(definition)

A male is paired with a female.

COLT :	FILLY ::	buck :	doe
(male)	(female)	(male)	(female)

A family relationship is paired with a similar family relationship.

FATHER :	SON ::	uncle :	nephew
(family relationship)	(family relationship)	(family relationship)	(family relationship)

A virtue is paired with a failing.

FORTITUDE :	COWARDICE ::	honesty :	dishonesty
(virtue)	(failing)	(virtue)	(failing)

An element is paired with a greater degree.

WIND :	TORNADO ::	water :	flood
(element)	(extreme)	(element)	(extreme)

A lesser degree is paired with a greater degree.

HAPPY :	ECSTATIC ::	warm :	hot
(lesser)	(greater)	(lesser)	(greater)

The plural is paired with the singular.

WE :	I::	they :	he
(plural)	(singular)	(plural)	(singular)

STRUCTURALS: part to whole, whole to part, part to part, and so on.

A part is paired with a whole.

LEG :	BODY ::	wheel :	car
(part)	(whole)	(part)	(whole)

A whole is paired with a part.

TABLE :	LEGS ::	building :	foundation
(whole)	(part)	(whole)	(part)

OPERATIONALS: time sequence, operations, stages, phases, beginning to ending, before to after, and so on.

One element of time is paired with another element of time.

DAY :	NIGHT ::	sunrise :	sunset
(time element)	(time element)	(time element)	(time element)

A time-sequence relationship is expressed.

START :	FINISH ::	birth :	death
(beginning)	(ending)	(beginning)	(ending)

A complete operation is paired with a stage.

FOOTBALL GAME :	QUARTER ::	baseball game :	inning
(operation)	(stage)	(operation)	(stage)

OVERLAPPING: Many analogies will overlap into more than one of the preceding basic types and will have to be analyzed by their purpose, use, cause-and-effect relationship, and so on.

A user is paired with his or her tool.

FARMER :	HOE ::	dentist :	drill
(user)	(tool)	(user)	(tool)

A creator is paired with a creation.

ARTIST :	PICTURE ::	poet :	poem
(creator)	(creation)	(creator)	(creation)

A cause is paired with its effect.

CLOUD :	RAIN ::	sun :	heat
(cause)	(effect)	(cause)	(effect)

A person is paired with his/her profession.

TEACHER :	EDUCATION ::	doctor :	medicine
(person)	(profession)	(person)	(profession)

An instrument is paired with a function it performs.

CAMERA :	PHOTOGRAPHY ::	yardstick :	measurement
(instrument)	(function)	(instrument)	(function)

A symbol is paired with an institution.

FLAG :	GOVERNMENT ::	cross :	Christianity
(symbol)	(institution)	(symbol)	(institution)

A reward is paired with an action.

MEDAL :	BRAVERY ::	trophy :	outstanding play
(reward)	(action)	(reward)	(action)

An object is paired with an obstacle that hinders it.

AIRPLANE :	FOG ::	car :	rut
(object)	(obstacle)	(object)	(obstacle)

Something is paired with a need that it satisfies.

WATER :	THIRST ::	food :	hunger
(thing)	(need)	(thing)	(need)

Something is paired with its natural medium.

SHIP :	WATER ::	airplane :	air
(thing)	(natural medium)	(thing)	(natural medium)

Something is paired with something else that can operate it.

DOOR :	KEY ::	safe :	combination
(thing)	(operator)	(thing)	(operator)

An object is paired with the material of which it is made.

COAT :	WOOL ::	dress :	cotton
(object)	(material)	(object)	(material)

NOTE: Many of these relationships can be presented in a negative rather than a positive sequence. For example, instead of a pair of words denoting an effect and its cause, you might encounter the *negation* of this relationship, an effect coupled with something that *cannot* be its cause. For example:

HAPPINESS : DEPRESSION :: PEACEFULNESS : STRESS

"*Happiness* is not the effect of *depression* in the same way as *peacefulness* is not the effect of *stress.*" The relationship here may be represented as EFFECT : (–)CAUSE, using the minus sign to indicate the negative element in the pair.

Practice Making Sentences with Word Pairs

The following exercises are designed to increase your skill in determining the relationship between two words. This skill will help you predict the necessary relationship for a second pair of words in an analogy question.

For each item in this exercise, write a short sentence describing the relationship between the two words. Make your sentences as specific as possible.

Example: CANDLE : WAX A candle is made of wax.

 1. DETAIN : RELEASE _____

 2. SLITHER : SNAKE _____

 3. BIT : DRILL _____

 4. BLADE : RAZOR _____

 5. ASSESS : MISJUDGE _____

 6. OASIS : DESERT _____

 7. DISTANCE : MILES _____

 8. FROWN : ADVERSITY _____

 9. BOUQUET : ROSES _____

10. LANGUAGE : BILINGUAL _____

11. APHID : INSECTICIDE _____

12. CALORIE : HEAT _____

13. BUTTERFLY : NET _____

14. INOCULATION : IMMUNITY _____

15. ARCHAIC : ANTIQUATED _____

16. INDIGENT : MONEY _____

17. ABRIDGED : BOOK _____

18. IMPULSIVE : BUYER _____

19. SYNONYMOUS : MEANING _____

20. SPY : COVERT _____

Possible Answers for Word Pairs

1. DETAIN is the opposite of RELEASE.

2. SLITHER is the way a SNAKE travels.

3. BIT is the sharp part of a DRILL that does the actual drilling.

4. BLADE is the sharp part of a RAZOR that does the cutting.

5. To MISJUDGE someone is to ASSESS them poorly.

6. An OASIS is the fertile area in the DESERT.

7. DISTANCE can be measured in the unit of MILES.

8. A FROWN is often a sign or facial expression showing ADVERSITY.

9. A BOUQUET could be made up of a group of cut ROSES.

10. BILINGUAL is the ability to speak two LANGUAGES.

11. APHID is an insect that can be killed or gotten rid of by using an INSECTICIDE.

12. CALORIE is a unit used to measure HEAT.

13. A BUTTERFLY is commonly caught by a NET.

14. An INOCULATION is often used to give IMMUNITY to a disease.

15. ARCHAIC and ANTIQUATED are synonyms meaning very old.

16. An INDIGENT is one who has no MONEY.

17. An ABRIDGED version is a shortened version of a BOOK.

18. IMPULSIVE would describe a BUYER who buys "at the spur of the moment."

19. SYNONYMOUS refers to words that have the same MEANING.

20. The activities of a SPY are COVERT.

Notice that some of the sentences used the second word first. Remember that if you make a sentence using the second word first, read the choices in the same order, using the same sentence.

A PATTERNED PLAN OF ATTACK

Make sure that you know what both words mean. The answer choices will help you identify the parts of speech of the original words.

Construct a sentence using the original words that shows or describes the relationship between them.

Try to make your sentence as specific as possible. If your sentence isn't specific enough, a few answer choices may seem good..

Be sure to keep the order of the first pair like the order of your answer. A wrong answer may present a correct relationship but in the wrong order.

Sometimes it is easier to make up a sentence using the original words in reverse order. Remember in this case to reverse the order of the words when you try them in your sentence. Be consistent.

Often you will need to consider not only the primary relationship between the words, but also a secondary relationship.

Watch the "level" of each word. If you have trouble with the meaning of a word, try to note or identify the "level" of one or both of the words. Is one word extreme, harsh, gentle, or pleasant?

Remember that your choice, the second pair of words, does not have to come from the same category, class, or type as the original pair of words. You are looking for the words that have the *same relationship*.

Classifying or understanding some common types of relationships can be helpful.

If the words are unfamiliar to you, try putting them into a sentence, or breaking them into parts, prefixes, suffixes, and roots.

To check your answer, read it as a complete analogy using the sentence "A is to B in the same way C is to D."

Practice Analogy Questions

Easy to Moderate

1. TROUPE : PLAYER ::

    A. team : coach

    B. singer : conductor

    C. club : member

    D. puppy : litter

    E. flower : bulb

2. GROWL : HOSTILITY ::

    A. smell : nose

    B. squeak : sound

    C. whinny : horse

    D. sigh : relief

    E. fear : bravery

3. CAPTURE : TRAP ::

    A. shoot : bulls-eye

    B. staple : paper clip

    C. hide : fence

    D. grind : mill

    E. ride : bicycle

4. CHILD : HUMAN ::

    A. bird : robin

    B. dog : pet

    C. snake : slither

    D. kitten : cat

    E. cow : milk

5. TOOTH : ORTHODONTIST ::

    A. surgeon : doctor

    B. cardiologist : heart

    C. tree : arborist

    D. gardener : plant

    E. petal : botanist

6. COLD : FRIGID ::

    A. hot : warm

    B. proper : prudish

    C. dark : light

    D. colorful : pale

    E. modest : bold

7. BREAKFAST : DINNER ::

    A. lark : nightingale

    B. stone : wood

    C. tent : tepee

    D. radar : sonar

    E. realism : rationalism

8. WAX : CANDLE ::

    A. string : kite

    B. ink : pen

    C. liquid : cup

    D. paper : pulp

    E. clay : pot

9. STUDENT : DORMITORY ::

    A. curtain : stage

    B. prisoner : jail

    C. alphabet : letter

    D. shirt : clothing

    E. skull : brain

10. BANANA : PEEL ::

    A. ventricle : heart

    B. door : knob

    C. bark : tree

    D. orange : rind

    E. section : orange

11. VIGILANTE : POLICE OFFICER ::

    A. posse : sheriff

    B. judge : jury

    C. villain : criminal

    D. lynching : execution

    E. intern : doctor

Medium

12. PODIUM : PLATFORM ::

    A. pulpit : pew

    B. stadium : grandstand

    C. utterance : euphemism

    D. critique : oration

    E. evangelism : ecclesiast

13. PLAGIARIST : APPROPRIATE ::

    A. counterinsurgent : militarize

    B. sentinel : watch

    C. journalist : report

    D. thief : loot

    E. felon : convict

14. OSSIFY : BONE ::

    A. chew : pulp

    B. intenerate : cud

    C. fossilize : stone

    D. cake : flour

    E. whisper : murmur

15. WATER : CISTERN ::

    A. bolt : fabric

    B. fodder : silo

    C. garland : flower

    D. spell : incantation

    E. prayer : religion

16. UNTRACTABLE : MALLEABLE::

    A. exorbitant : wasteful

    B. gregarious : sociable

    C. immutable : changeable

    D. palpable : surreal

    E. culinary : olfactory

17. SANGUINE : CHEERFUL ::

    A. destitute : poor

    B. confident : presumptuous

    C. obscure : clear

    D. brilliant : valedictory

    E. pallid : ebullient

18. PLOTTER : CABAL ::

    A. crew : gathering

    B. advisor : cabinet

    C. conductor : orchestra

    D. choir : tenor

    E. senate : representative

19. WISE : SAGE ::

    A. craven : knight

    B. erudite : leader

    C. judicious : mediator

    D. propitious : mendicant

    E. sensual : voluptuary

20. BOAT : WAKE ::

    A. path : trail

    B. thought : rumination

    C. inspiration : muse

    D. foot : track

    E. railroad : train

21. DIRGE : MOURNING ::

    A. affliction : adversity

    B. mirth : entertainment

    C. laughter : merriment

    D. lamentation : funeral

    E. baffle : sound

22. OIL PAINTING : CANVAS ::

    A. etching : acid

    B. violin : bow

    C. fresco : plaster

    D. building : architecture

    E. watercolor : brush

23. SPIDER : OCTOPUS ::

    A. gibbon : salmon

    B. locust : water beetle

    C. coyote : dolphin

    D. cheetah : lobster

    E. oriole : ground hog

24. WAIT : LURK ::

    A. prowl : slink

    B. expect : anticipate

    C. service : repair

    D. move : skulk

    E. trot : canter

25. THWART : ABET ::

    A. unity : knit

    B. strip : befit

    C. lacerate : incise

    D. savor : enjoy

    E. murmur : caterwaul

26. CUPOLA : ROOF ::

    A. branch : tree

    B. building : story

    C. bishop : scepter

    D. airplane : propeller

    E. statue : pedestal

27. CHECKERS : CHESS ::

    A. tennis : soccer

    B. field hockey : ice hockey

    C. basketball : gymnastics

    D. hearts : bridge

    E. square : diamond

28. PLAN : SCHEME ::

    A. antiquity : age

    B. annoyance : evasion

    C. statesman : politician

    D. assignment : task

    E. prison : jail

29. ESSAY : SHORT STORY ::

    A. symphony : concerto

    B. biography : novel

    C. acrylic : watercolor

    D. comedy : burlesque

    E. monologue : drama

Above Average to Difficult

30. MAUDLIN : DISPASSION ::

    A. dauntless : trepidation

    B. mawkish : sentiment

    C. vociferous : predilection

    D. avuncular : kinship

    E. perfunctory : laxity

31. PERORATION : ADDRESS ::

    A. preamble : speech

    B. orchestration : overture

    C. score : finale

    D. chapter : fiction

    E. denouement : novel

32. LUGUBRIOUS : DOLEFUL ::

    A. banal : insipid

    B. tractable : recalcitrant

    C. pensive : vacuous

    D. profligate : miserly

    E. tangible : illusory

33. ETHEREAL : EMPYREAL ::

    A. celestial : deferential

    B. earnest : saccharine

    C. fastidious : foolhardy

    D. obsequious : sycophantic

    E. empirical : speculative

34. PROPHYLACTIC : THWART ::

- **A.** nostalgia : simper
- **B.** misanthrope : abhor
- **C.** penury : remunerate
- **D.** neophyte : begin
- **E.** stratagem : beguile

35. INFINITESIMAL : BANTAM ::

- **A.** diaphanous : obsolete
- **B.** fatuous : judicious
- **C.** gargantuan : immense
- **D.** commensurate : disparate
- **E.** quiescent : agile

36. PILGRIMAGE : JOURNEY ::

- **A.** hiatus : foray
- **B.** cruise : ship
- **C.** valediction : antecedent
- **D.** divination : prognostication
- **E.** crusade : pacifism

37. APHORISM : PITHY ::

- **A.** brevity : inconcise
- **B.** adage : sagacious
- **C.** giant : diminutive
- **D.** antagonist : affable
- **E.** symphony : cacophonous

38. TORTUOUS : PASSAGE ::

- **A.** labyrinthine : enigma
- **B.** excruciating : pain
- **C.** serpentine : course
- **D.** helical : viper
- **E.** taciturn : orator

39. AVIARY : FEATHER ::

- **A.** chicken : coop
- **B.** pen : zoo
- **C.** penitentiary : delinquent
- **D.** carrel : athenaeum
- **E.** aquarium : scale

40. WRATH : IRATE ::

- **A.** sloth : sleepy
- **B.** gluttony : starving
- **C.** pride : sullen
- **D.** envy : craving
- **E.** avarice : acquisitive

41. PINK : CLOTH ::

- **A.** mortar : brick
- **B.** weigh : anchor
- **C.** weld : metal
- **D.** card : wool
- **E.** saw : board

42. TRIPTYCH : PANEL ::

- **A.** triangle : hypotenuse
- **B.** circle : arc
- **C.** cathedral : nave
- **D.** blossom : sepal
- **E.** cheese : butter

43. SAVANNAH : VELDT ::

- **A.** ulcer : eczema
- **B.** forest : woodland
- **C.** fathom : acre
- **D.** falcon : condor
- **E.** tundra : glacier

44. CHIME : JAR ::

   A. hug : abjure

   B. seek : find

   C. inquire : question

   D. negotiate : haggle

   E. command : request

45. DOMINO : MASQUERADE ::

   A. tango : dance

   B. violin : concert

   C. tuxedo : prom

   D. taxi : limousine

   E. dice : casino

46. SOMNAMBULIST : SOMNILOQUIST ::

   A. dancer : singer

   B. talker : walker

   C. mime : magician

   D. octogenarian : teenager

   E. follower : authority

Answers and Explanations for Analogy Questions

Easy to Moderate

1. C. A *troupe* is a group of *players* or actors. Similarly, a *club* is a group of *members*.

2. D. A *growl* is a verbal expression of *hostility*. Similarly, a *sigh* is a verbal expression of *relief*.

3. D. A *trap* is used specifically to *capture*. Similarly, a *mill* is used specifically to *grind.* The relationship type is functional.

4. D. A *child* is a young *human* being. Similarly, a *kitten* is a young *cat.*

5. C. An *orthodontist* is a specialist whose field is the care of *teeth*. Similarly, an *arborist* is someone who specializes in the care of *trees.*

6. B. To be *frigid* is to be extremely *cold.* Similarly, to be *prudish* is to be extremely *proper.*

7. A. The nouns describe meals, one of the morning, *breakfast,* and one of the evening, *dinner*. The *lark* is conventionally presented as a dawn singer, and the *nightingale* is associated with the evening and night. Although it is true that dinner can also describe a midday meal, no other answer choice provides a morning/midday option.

8. E. By definition, a *candle* is an object that is usually made out of *wax*. Similarly, by definition, a *pot* is an object that is usually made out of *clay*.

9. B. A *dormitory* is a building that houses or contains *students.* Similarly, a *jail* is a building that houses or contains *prisoners.*

10. D. A *peel* is the outside covering of a *banana.* Similarly, a *rind* is the outside covering of an *orange.*

11. D. The first term is a extralegal counterpart of the second. A *lynching* is an illegal form of *execution*, as *vigilante* (a member of an enforcement group organized without legal authority) differs from a *police officer*.

Medium

12. D. A *podium* is a type of small platform. Similarly, a *critique* is a type of small (short) oration.

13. D. A *plagiarist* is someone who appropriates written material unlawfully. Similarly, a *thief* is someone who loots or takes possession of material unlawfully.

14. C. To *ossify* is to cause a substance to harden into bone. Similarly, to *fossilize* is to cause a substance to harden into stone.

15. B. A *cistern* is a container specifically for water. Similarly, a *silo* is a container specifically for fodder or grain.

16. C. Something that is *untractable* (not changeable) cannot be *malleable* (pliable). Similarly, something that is *immutable* is not *changeable*.

17. A. By definition, someone who is *sanguine* is *cheerful*. Similarly, by definition, someone who is *destitute* is *poor*.

18. B. A *cabal* is a group of political *plotters* or conspirators. Similarly, a *cabinet* is a group of political *advisors*.

19. E. By definition, a *sage* is someone who is very *wise*. Similarly, by definition, a *voluptuary* is someone who is very *sensual*.

20. D. A *wake* is the (aquatic) evidence for the prior passage by a *boat*. Similarly, a *track* is the (terrestrial) evidence for the prior passage of a human or animal *foot*.

21. C. A *dirge* is a verbal expression of *mourning*, usually in the form of a song sung at a funeral. Similarly, *laughter* is the verbal expression of *merriment*.

22. C. The *canvas* is the surface on which the *oil painting* is painted. Similarly, a *fresco* is painted on wet *plaster*.

23. B. The *spider* and the *octopus* are eight-legged animals of land and sea. The *locust* and the *water beetle* are six-legged animals of land and sea. The leg count of the animals in the other options is not parallel.

24. D. The second of the two verbs adds sinister overtones to the action of the first—*wait* : *lurk*. *Move* and *skulk* (to move in a stealthy manner) are similarly related.

25. E. The two verbs, *thwart* and *abet*, are opposites, like *murmur* (to make a low, indistinct sound) and *caterwaul* (to howl shrilly).

26. E. A *cupola* is a small structure built or resting on a *roof* (sometimes used as a belfry or lookout point). The *statue* on a *pedestal* is the closest parallel.

27. **D.** Both *checkers* and *chess* are board games, but the moves and strategies in *chess* are more complex. Both *hearts* and *bridge* are card games, with the latter being the more complex.

28. **C.** A *scheme* is a *plan* with sinister connotations. Of the choices here, the closest is the *statesman* is a *politician* with negative connotations.

29. **B.** An *essay* and a *short story* are both prose works, nonfiction and fiction. Similarly, a *biography* and a *novel* are both prose works, nonfiction and fiction, but they are longer works.

Above Average to Difficult

30. **A.** Someone who is *maudlin* (or overly emotional) does not have *dispassion* (or calmness). Similarly, someone who is *dauntless* (or brave) does not have *trepidation* (or fear).

31. **E.** A *peroration* is the closing or end of a formal *address*. Similarly, a *denouement* is the ending of a *novel.*

32. **A.** To be *lugubrious* is to be *doleful;* both terms refer to sorrow and mourning. Similarly, to be *banal* is to be *insipid*; both terms refer to the commonplace or trite.

33. **D.** To be *ethereal* is to be *empyreal;* both terms refer to the heavenly or unearthly. Similarly, to be *obsequious* is to be *sycophantic*; both terms refer to behavior that is excessively fawning, servile, or submissive.

34. **E.** A *prophylactic* is something that is used deliberately to *thwart* or prevent, as, for example, a drug is used to prevent symptoms. Similarly, a *stratagem* is something that is used deliberately to *beguile,* as, for example, a deceitful plan is used to trick. The relationship is one of function.

35. **C.** Something that is *infinitesimal* is very small or *bantam*. Similarly, something that is *gargantuan* is very large or *immense.*

36. **D.** In the realm of religion, a *pilgrimage* is a type of *journey*. Similarly, *divination* is a type of *prognostication*.

37. **B.** An *aphorism* is by definition a *pithy* (terse and cogent) saying, like "a stitch in time saves nine." Similarly, an *adage* is a brief saying that is by definition *sagacious* or wise.

38. **C.** A *passage* that is *tortuous* is one that is winding, twisted, or crooked. Similarly, by definition, a *course* that is *serpentine* is also considered to be winding.

39. **E.** An *aviary* is an enclosure for birds, or animals that are usually covered in *feathers*. Similarly, an *aquarium* is an enclosure for animals that are usually covered in *scales*.

40. **E.** The noun *wrath* is the consequence of the disposition described by the adjective *irate*. Similarly, an *acquisitive* person is guilty of *avarice*.

41. **E.** To *pink* is to cut (in this case, *cloth*) with a saw-toothed edge. The analogy is to *saw* a *board*.

42. **A.** A *triptych* is a hinged set of pictures or carvings with three *panels*. The *hypotenuse* is one of three sides of a *triangle*.

43. **B.** *Savannah* and *veldt* are nearly synonyms, a flat, open grassland. The *forest-woodland* analogy is the closest.

44. **A.** To *chime* is to sound harmoniously, and to *jar* is to cause a sound discordantly. Similarly, to *hug* (to cling to or cherish) is the antonym of to *abjure* (to renounce). Both verbs might be used with a belief as object.

45. **C.** One meaning of *domino* is a mask or a masked costume worn to a *masquerade*. The *tuxedo* is the proper *prom* costume.

46. **A.** A *somnambulist* is a sleepwalker. A *somniloquist* is a sleeptalker. So the most similar relationship would be a *dancer* to a *singer*, because one concentrates on physical movement and the other concentrates on vocalizing. Choice **B** *talker* : *walker* would have been an excellent choice except that they are in the wrong order.

Introduction to Sentence Completion

Ability Tested

This section tests your ability to complete sentences with a word or words that retain the meaning of the sentence and are compatible with given syntax and grammar cues.

Basic Skills Necessary

Good reading comprehension skills help in this section, as does a good college- or graduate-level vocabulary.

Directions

Each blank in the following sentences indicates that something has been omitted. Considering the words beneath the sentence, choose the word or set of words that best fits the whole sentence.

Analysis

Note that you must choose the *best* word or words. In many cases several choices *might* fit, but you are to select the one that fits the meaning of the sentence *most precisely*. If the sentence contains two blanks, remember that *both of the words must fit*.

Suggested Approach with Samples

After reading the sentence and *before* looking at the answer choices, think of words you would insert and look for synonyms to them.

Sample

1. Money _____ to a political campaign should be used for political purposes and nothing else.

How would you fill in the blank? Maybe with the word given *or* donated? *Now look at the choices and find a synonym for* given *or* donated:

  A. used

  B. forwarded

  C. contributed

  D. spent

  E. channeled

The best choice is **C** *contributed;* it is the nearest synonym to *given* or *donated* and makes good sense in the sentence.

Sample

2. Although it was not apparent at the time, in _____ we can see how Miles Davis' performances in the 1970s were _____ by what was happening then in popular music.

  A. retrospect . . . influenced

  B. effect . . . modified

  C. fact . . . unchanged

  D. foresight . . . endangered

  E. time . . . engendered

The best choice is **A**. After reading the sentence, you may decide that the phrase *not apparent at the time* would suggest *looking back* for the first blank and that the second word needs to be *affected*. You could read the sentence "Although it was not apparent at the time, in *looking back* we can see how Miles Davis' performances in the 1970s were *affected* by what was happening then in popular music." Now, looking for synonyms for *looking back* and *affected* gives you choice **A** *retrospect . . . influenced.*

> **Look for signal words connecting contrasting ideas. Spotting signal words in the sentence can be invaluable. Some signal words, such as however, although, on the other hand, but, instead, despite, regardless, rather than, and except, connect contrasting ideas.**

Sample

3. Most candidates spend _____ they can raise on their campaigns, but others wind up on election day with a _____.

   A. so . . . bankroll

   B. time . . . vacation

   C. everything . . . surplus

   D. every cent . . . deficit

   E. nothing . . . war chest

The best choice is **C**. *But* signals that the first half of the sentence *contrasts* with the second half. The fact that most candidates spend *everything* (and end up with nothing) contrasts with those who end up with a *surplus.*

Sample

4. Can public opinion be influenced so that it _____ rather than encourages the proliferation of the sale of firearms?

   A. redoubles

   B. advances

   C. inverts

   D. impedes

   E. amplifies

The best choice is **D**. The clue here is *rather than encourages.* You need a verb whose object is *proliferation* and that means the opposite of *encourages.* The best choice is *impedes,* which means obstructs or retards. To *invert* is to turn upside down.

Sample

---

5. Surfing was once a sociable pastime, but now joining another surfer on a wave is _____ as heinous as cutting off another driver on the highway.

    A. an occasion

    B. an offense

    C. an adage

    D. a discourtesy

    E. an amenity

The best choice is **B**. The first clause of the sentence contrasts a time when surfing was *sociable* with the present, so the last half of the sentence must describe an antisocial action. The word *but* tips off the contrast. Choices **B** *an offense* and **D** *a discourtesy* are the only two that contrast with *sociable. An offense* is the better choice, because *a discourtesy* is not strong enough to fit well with *heinous* (shockingly evil).

> **Notice signal words connecting similar ideas. Other signal words, such as *in other words, besides, and, in addition, also, therefore, furthermore,* and *as,* often connect similar ideas.**

Sample

---

6. The tools found in the New Mexico excavation are _____ as a single implement might have several edges, each with a different use.

    A. ancient

    B. primitive

    C. ferrous

    D. versatile

    E. reliable

The best choice is **D**. The tools the sentence describes have *several edges* and several uses, and the missing adjective should fit these conditions. *Versatile* means capable of many things.

Sample

---

7. This treatise is concerned only with the process unique to the period in question; therefore, no attempt has been made to _____ phenomena _____ to that era.

   A. include . . . unrelated

   B. omit . . . irrelevant

   C. re-create . . . germane

   D. discuss . . . essential

   E. evaluate . . . pertinent

The best choice is **A**. The words in the first half of the sentence that are especially related to those to be filled in in the second half are *is concerned only* and *unique to the period*. The verb in the first blank is parallel to *is concerned* and describes the contents. Choices **A** *include,* **D** *discuss,* or possibly **E** *evaluate* are possible. The second blank needs an adjective that will make the phrase _____ *to that era* parallel to *unique to the period*. Choice **B** *irrelevant* would work, but only **A** has the correct first word.

Sample

---

8. We need experiments to discover whether the systems that we have designed that work in theory also work in _____, in other words, in the real world.

   A. hypotheses

   B. fact

   C. space

   D. part

   E. essence

The best choice is **B**. The key words here are *in other words,* which tell you that your choice must be similar to *the real world.* The terms *in fact* and *in the real world* both refer to similar ideas in this sentence.

Focus on signal words that help define words. Still other signal words will actually give you a definition or point you to the definition of the word needed.

Sample

> **9.** The unique world of the film is _____, both wholly recognizable and unfamiliar.
>
> **A.** contradictory
>
> **B.** realistic
>
> **C.** simplistic
>
> **D.** timeless
>
> **E.** unchanging

The best choice is **A**. The second part of this sentence, *both wholly recognizable and unfamiliar* is a perfect example of the word needed, *contradictory*. The words *recognizable* and *unfamiliar* contradict each other (are opposite).

Sample

> **10.** Editorial cartoonists cannot be successful unless they can _____ the consciences of their audience and stir up controversy.
>
> **A.** assuage
>
> **B.** tweak
>
> **C.** dwarf
>
> **D.** amuse
>
> **E.** shield

The best choice is **B**. The missing verb must mean something that will parallel *stir up*. Of the five choices, only *tweak* (to irritate, pinch) will fit.

Sample

> **11.** Along with a handful of other _____ the lawyer refuses to believe the evidence submitted by the FBI.
>
> **A.** investigators
>
> **B.** rationalists
>
> **C.** regionalists
>
> **D.** legislators
>
> **E.** skeptics

The best choice is **E.** The last half of the sentence describes a reluctance to believe—the action of a *skeptic.*

> **Watch for contrasts between positive and negative words. Look for words like not, cannot, never, and no.**

Sample

---

12. A virtuous person will not shout _____ in public; he or she will respect the _____ of other people.

    A. obscenities . . . feelings

    B. loudly . . . comfort

    C. anywhere . . . presence

    D. blessings . . . cynicism

    E. insults . . . threat

The best choice is **A.** The first blank is obviously a negative word, something that a good person would *not* shout; the second blank is a positive word, something that a good person *would* respect. Choice **B** is neutral-positive; **C** is neutral-neutral; **D** is positive-negative; **E** is negative-negative. Only choice **A** offers a negative-positive pair of words.

Sample

---

13. The chairperson was noted for not being obstinate; on the contrary, the members praised her _____.

    A. resistance

    B. experience

    C. coherence

    D. verbosity

    E. flexibility

The best choice is **E.** The correct answer must describe a praiseworthy quality opposite to obstinacy. Although **B** and **C** are good qualities, only *flexibility,* **E,** means pliancy, the quality of being flexible.

Sample

> **14.** Malcolm did not _____ the filmed version of his novel but rather _____ it, because all the exciting parts that he had written were excluded.
>
> **A.** love . . . liked
>
> **B.** appreciate . . . was appalled by
>
> **C.** hate . . . detested
>
> **D.** approve . . . accepted
>
> **E.** dismiss . . . applauded

The best choice is **B**. The word *not* indicates that the first blank must be the opposite of the second blank. Choices **A**, **C**, and **D** do not give opposites. Choices **B** and **E** could both be seen as opposites, but only choice **B** makes sense in the sentence. If all the exciting parts of the novel were left out, it's reasonable to assume that the author would *not* like *(appreciate)* that fact.

Negative words can change the direction of the sentence, sometimes making the logic of the sentence more difficult to follow.

Sample

> **15.** Tamino's choice of the quest to rescue Pamina is _____, not accidental, and he undertakes it with _____ and steadfastness.
>
> **A.** considered . . . trepidation
>
> **B.** circumstantial . . . valor
>
> **C.** intentional . . . reluctance
>
> **D.** deliberate . . . courage
>
> **E.** fortuitous . . . ardor

The best choice is **D**. The adjective must be the opposite of *accidental.* The better choices are the synonyms of **A**, **C**, and **D**—*considered, intentional,* and *deliberate.* **B** and **E** do not fit this context. The second blank requires a noun that is like *steadfastness* or describes a sterling quality. Choice **A** *trepidation* means fear or hesitancy, and choice **C** *reluctance* means unwillingness. Neither will do, but **D** *courage* is what is needed.

Sample

---

16. The room was in an advanced state of disrepair; not only were the velvet draperies _____, but they were also mottled and _____.

    A. bright . . . torn

    B. old . . . clean

    C. faded . . . frayed

    D. new . . . mangled

    E. tattered . . . original

The best choice is **C**. The logic of this sentence could be difficult to follow because of the negative wording. *State of disrepair* tips you off that both blanks must be filled with negative words. Choice **C** *faded . . . frayed* is the only negative pair. The words also fit the meaning in the sentence.

Questions with two words missing should be attempted one word at a time. But remember that both words must fit.

Sample

---

17. The _____ predictions of greatly decreased revenues next year have frightened lawmakers into _____ budget reductions.

    A. encouraging . . . sizeable

    B. convincing . . . minute

    C. alarming . . . negligible

    D. optimistic . . . huge

    E. dire . . . drastic

The best choice is **E**. Notice that trying the first word will help you eliminate answer choices **A**, **B**, and **D**. If the predictions are of decreasing funds and frightening to lawmakers, the first adjective must be either *alarming* **C** or *dire* **E** (fearful, dreadful). Now try the second choice to get the correct answer. Because the lawmakers have been scared into action, you can infer that the reductions are *drastic* **E** rather than *negligible* **C**.

Sample

> **18.** The government _____ that the new laws are necessary to prevent unscrupulous business owners from _____ off the profits while the workers are underpaid.
>
> **A.** implies . . . dilating
>
> **B.** anticipates . . . privatizing
>
> **C.** infers . . . acquiring
>
> **D.** requires . . . living
>
> **E.** contends . . . siphoning

The best choice is **E**. The only first words that make sense in the sentence are choices **A** *implies* and **E** *contends.* But the second word in choice **E**, *siphoning*, is the only one that fits. "*Siphoning* off profits" is a common phrase and is something that unscrupulous business owners might try to do. Choice **B** *anticipates* usually requires future tense, for example, "that the new laws will be necessary," so it is not a good choice.

Sometimes it is more efficient to work from the second blank first. If there are two blanks, you can start by looking at the blank that seems easiest to fill.

Sample

> **19.** The program, which _____ housing for disadvantaged families, should be a tremendous _____ to the beneficiaries who are able to meet income requirements.
>
> **A.** allows . . . detriment
>
> **B.** provides . . . boon
>
> **C.** insures . . . expenditure
>
> **D.** includes . . . drawback
>
> **E.** eliminates . . . benefit

The best choice is **B**. Because there are many possibilities for the first blank, you may wish to start with the second blank. The phrase *a tremendous _____ to the beneficiaries* tells you that this second blank must be a "positive" word, because being a beneficiary (one who benefits) is positive. So you should look for a positive second word and then try the first word. Choices **B** *boon* and **E** *benefit* are the only two answers with second words that fit. Now take each choice and see if the first word also fits. Choice **B** *provides . . . boon* (advantage) makes

complete sense. Although the second word in choice **E** fits perfectly, the first word doesn't make sense in the sentence. Again, keep in mind that each word must fit for the answer to be correct.

Sample

> **20.** Her parents were _____ when, despite losing the first 3 games, Sally _____ to win the set by a 6-3 score.
>
> **A.** surprised . . . failed
>
> **B.** relieved . . . came back
>
> **C.** puzzled . . . refused
>
> **D.** alarmed . . . attempted
>
> **E.** delighted . . . was unable

The best answer is **B**. There are no clues here to tell you which of the first words describes the reaction of the parents. Any of the five might work. But if you deal with the second blank first, you can see that the word *despite* makes it clear that Sally must win the set. Choice **B** *came back* looks like the best choice, although **D** is possible. That **B** is better is confirmed by the first word, as *relieved* is better than *alarmed.*

Sample

> **21.** The merger will eliminate _____ and provide more _____ cross-training of staff.
>
> **A.** profit . . . and more
>
> **B.** paperwork . . . or less
>
> **C.** duplication . . . effective
>
> **D.** bosses . . . wasteful
>
> **E.** competitors . . . aggressive

The best choice is **C**. The second blank is something that is provided. Chances are that the something provided is a positive word, and *effective* seems like a good choice. Reading choice **C** into the sentence, you will find that it makes good sense and is stylistically and structurally correct.

If you don't spot any signal words or you don't know the meaning of some of the choices (or if you're just stumped) quickly read each answer choice in and see which sounds best. Sometimes this last method will help you at least eliminate some of the choices so that you can take an educated guess.

Sample

22. The fertile and productive fields are located at the _____ of the Gila and the Arizona Rivers and are _____ by waters from both.

    A. junction . . . desiccated

    B. confluence . . . irrigated

    C. bank . . . drained

    D. source . . . submerged

    E. end . . . inundated

The best choice is **B**. The first word probably refers to the place where the rivers are close, because the fields are watered by both. Except for **C**, any of the 4 nouns is possible. *Confluence* means a flowing together, the place where two waterways come together. The past participle must refer to the watering of these fertile lands. So *desiccated* (dried up) or *drained* can be eliminated. If the fields are productive, *irrigated* (supplied with water) makes better sense than *inundated* or *submerged,* which suggest destructive flooding.

Sample

23. Many lawyers now believe that the _____ of the tobacco industry is so widely _____ by the public that juries will finally be willing to convict the corporations when the cases go to trial.

    A. advertising . . . disseminated

    B. propaganda . . . credited

    C. repute . . . supported

    D. mendacity . . . queried

    E. guilt . . . acknowledged

The best choice is **E**. If you quickly read each choice into the sentence, you'll notice that some of the choices just don't seem to make sense, sound right, or fit. Because the last part of the sentence says *willing to convict the corporations when the cases go to trial,* the idea that the *guilt* is *acknowledged* sounds good and fits perfectly.

A special reminder: Always read your answer into the sentence to make sure it makes sense. This will often help you avoid oversights or simple mistakes.

A PATTERNED PLAN OF ATTACK

After reading the sentence and before looking at the answer choices, think of words you would insert and look for synonyms to them.

↓

Look for signal words connecting contrasting ideas. Words such as *however, although, on the other hand, but, instead, despite, regardless, rather than,* and *except*, connect contrasting ideas.

↓

Notice signal words connecting similar ideas. Other signal words such as *in other words, besides, and, in addition, also, therefore, furthermore*, and *as,* often connect similar ideas.

↓

Focus on signal words that help define words.

↓

Watch for contrasts between positive and negative words. Look for words such as *not, cannot, never*, and *no.*

↓

Negative words can change the direction of the sentence, sometimes making the logic of the sentence more difficult to follow.

↓

Questions with two words missing should be attempted one word at a time. But remember that both words must fit.

↓

Sometimes it is more efficient to work from the second blank first. If there are two blanks, you can start by looking at the blank that seems easiest to fill.

↓

If you don't spot any signal words, or don't know the meaning of some choices or if you're just stumped, quickly read each answer choice in and see which sounds best. Sometimes this will help you eliminate some choices so you can take an educated guess.

Practice Sentence Completion Questions

Easy to Moderate

1. Churchill was cordial to Beria when they first met, but that was the last show of _____ between them.

  A. charity

  B. enmity

  C. amiability

  D. pathology

  E. austerity

2. Ignoring the increasing cloudiness and the _____ rumblings in the sky, they opened the picnic basket on the shore of the lake.

  A. ominous

  B. blithe

  C. monetary

  D. arduous

  E. auspicious

3. The primary _____ of the region's cuisine, such as beans, legumes, and pasta, provide high levels of complex carbohydrates and often _____ meat as the primary source of protein in the diet.

  A. requirements . . . supplement

  B. components . . . replace

  C. fads . . . subjoin

  D. facet . . . duplicate

  E. ingredients . . . indemnify

4. The _____ of Darwin's theory of evolution on Victorian religion was to create a bitter _____ of ideas and beliefs.

  A. result . . . moderation

  B. effect . . . conflict

  C. extension . . . growth

  D. origin . . . compromise

  E. influence . . . solidarity

5. *America at Sea* is a one-volume _____ history that covers the nation's military and commercial activities.

  A. aquatic

  B. ancient

  C. meretricious

  D. theological

  E. maritime

6. The eruption of the volcano in January was only _____ of the much larger event in March.

  A. an advent

  B. a ukase

  C. an elision

  D. a precursor

  E. a subtext

7. Virginia has adopted detailed new _____ for what students should know in English, history, mathematics, and science.

   A. maxims

   B. jurisdictions

   C. benchmarks

   D. affirmations

   E. vortices

8. Truman tried to continue Roosevelt's _____ approach to the Soviet Union, but by 1946, he had adopted a much tougher policy toward the Russians.

   A. cursory

   B. strict

   C. obligatory

   D. uncompromising

   E. conciliatory

9. As the controversial argument continued, the debaters became more _____ and their remarks became more _____.

   A. subdued . . . hostile

   B. vehement . . . acrimonious

   C. reticent . . . cliché

   D. affable . . . adverse

   E. emotional . . . adroit

10. The Oxford research team was afraid that sensationalized television reports of its work on paranormal phenomena would undermine its academic _____.

    A. responsibility

    B. questioning

    C. credibility

    D. freedom

    E. credulousness

11. The thought of a nuclear _____ sparked by a misunderstanding poses an awesome _____.

    A. device . . . reverberation

    B. holocaust . . . specter

    C. danger . . . spectacle

    D. liaison . . . probability

    E. explosion . . . calamity

12. Unless the environmentalists can draft a more _____ proposal, the courts will disallow their proposition as too vague.

    A. legal

    B. restrictive

    C. encompassing

    D. specific

    E. ecological

13. Heavy snows in the passes of the Pyrenees have seriously _____ rescuers trying to reach travelers surprised by the spring blizzards.

A. excluded

B. expedited

C. rappelled

D. assisted

E. hampered

14. It is difficult to take sides with either party because both of the combatants are so _____ to _____.

A. indifferent . . . evasion

B. reluctant . . . compromise

C. hostile . . . interference

D. impenetrable . . . rhetoric

E. averse . . . expectation

15. The success of the English-Spanish simulcast must be _____ to Margo Quiroz, who interprets 40 different news items in each nightly newscast.

A. attested

B. censured

C. interpreted

D. transliterated

E. attributed

16. Time and time again, the power of the mob in Chicago appears to have been annihilated, but it has always _____ itself.

A. reappeared

B. eliminated

C. returned

D. regenerated

E. exhumed

17. One cannot _____ to be impressed by the structural and _____ differences between the United States as a federal union in 1789 and the United States as a federal union today.

A. refuse . . . legal

B. stop . . . attitudinal

C. begin . . . economic

D. fail . . . operational

E. start . . . classical

Average

18. Comparing him to P.T. Barnum, Mencken called William Jennings Bryan a _____, a mountebank, a fake without shame or dignity.

A. coward

B. charlatan

C. poltroon

D. craven

E. demigod

19. He _____ into the room as if he had just been _____ from a deep sleep.

    A. strode . . . ejected

    B. proceeded . . . summoned

    C. minced . . . fomented

    D. shambled . . . roused

    E. swaggered . . . awakened

20. Unless the prevailing _____ attitude toward genetically altered food is changed, the biotech industry will have little _____ to pursue research and development.

    A. rampant . . . motive

    B. auspicious . . . occasion

    C. censorious . . . disinclination

    D. negative . . . incentive

    E. unassailed . . . reason

21. Alarmist newspaper stories present the pit bull terrier as _____ killer, but owners insist that the dog is friendly and _____.

    A. an invidious . . . malleable

    B. a malign . . . philanthropic

    C. a ferocious . . . docile

    D. an infamous . . . self-serving

    E. a dissolute . . . venal

22. Rather than _____ the commuter delays, the new toll road has _____ the problems, and the traffic jams are worse than ever.

    A. minimize . . . extenuated

    B. extol . . . compounded

    C. abate . . . decimated

    D. alleviate . . . aggravated

    E. emend . . . increased

23. That so shameless, sentimental, and dishonest a film attracts a large and enthusiastic audience is _____ of how low the popular taste has _____.

    A. an indication . . . soared

    B. a gauge . . . refined

    C. a signatory . . . fallen

    D. a refutation . . . descended

    E. a barometer . . . plummeted

24. The show is worth seeing for the _____ of Judy Convoy's vivacious performance, which _____ the stage whenever she appears.

    A. effervescence . . . enlivens

    B. verve . . . deforms

    C. torpor . . . dominates

    D. bravado . . . enervates

    E. sprightliness . . . muffles

25. The company's _____ produce new, daring, and socially relevant plays has made it the most _____, though not the most popular, theater group in the city.

   A. reluctance to . . . esoteric

   B. avidity to . . . congenial

   C. commitment to . . . provocative

   D. inability to . . . liberal

   E. eagerness to . . . regressive

26. The company has accused its larger rival of trying to _____ the _____ retail market in the north by offering illegal contracts to outlets in the area.

   A. control . . . bankrupt

   B. monopolize . . . lucrative

   C. annul . . . profitable

   D. corner . . . factitious

   E. divest . . . remunerative

27. Some historians contend that the _____ Germany was forced to pay after World War I _____ made possible the rise of Nazism.

   A. restorations . . . indefinitely

   B. recriminations . . . finally

   C. expenditures . . . gratuitously

   D. reparations . . . ultimately

   E. disbursements . . . immediately

28. A highly _____ player, the champion will snarl at himself and rage at the umpire with no _____ whatsoever.

   A. reticent . . . reason

   B. demonstrative . . . provocation

   C. recusant . . . excuse

   D. obstreperous . . . corroboration

   E. emotional . . . antagonism

29. Though it lasted only half an hour, the ponderous lecture seemed _____ to most of the students.

   A. interminable

   B. cabalistic

   C. waggish

   D. vendible

   E. expressive

30. Students at Pennsylvania State University have _____ the Liberty Bell's original tone, a _____ of four notes, E flat, F sharp, G sharp, and B flat.

   A. relegated . . . combination

   B. replicated . . . melding

   C. decanted . . . concurrence

   D. reproduced . . . disjunction

   E. intimated . . . knell

31. Slovenia's declared intention to _____ and Croatia's decision to _____ the conference, aimed at preventing the breakup of the federation, are twin blows to Yugoslavian unity.

A. secede . . . boycott

B. withdraw . . . foster

C. divide . . . consolidate

D. recede . . . avoid

E. patronize . . . exclude

32. Walters and Torres _____ seven other candidates in the special election, but because neither _____ more than 50 percent of the vote, a runoff election will have to be held for the two of them.

A. trailed . . . captured

B. defeated . . . recaptured

C. out-polled . . . garnered

D. eliminated . . . reclaimed

E. evaded . . . achieved

33. My wealthy aunt is more than economical; she is so _____ that she washes paper plates to be used again.

A. affluent

B. parsimonious

C. indigent

D. impoverished

E. selfish

34. Puzzled passersby occasionally see the _____ message "Nowhere in Particular" on the destination signs of Culver City buses.

A. minatory

B. exclamatory

C. enigmatic

D. surreptitious

E. ameliorative

Above Average to Difficult

35. Although they are now commercially _____, caper bushes are still found growing wild in many _____ Mediterranean areas.

A. exported . . . fertile

B. marketed . . . urban

C. preempted . . . fluvial

D. eluded . . . indigenous

E. cultivated . . . remote

36. The meager ruins of the castle, which once covered 6 acres of ground, can now be of interest only to _____.

A. antiques

B. antiquaries

C. reliquaries

D. patricians

E. histrionics

37. The _____ problem of piracy has the music industry worried, because the pirates overseas are _____ by the crackdown in the United States.

   A. burgeoning . . . unabashed

   B. widespread . . . intimidated

   C. immaterial . . . incriminated

   D. minor . . . untroubled

   E. evanescent . . . undeterred

38. The writing is awkward, even _____, but the novel has nonetheless attracted a large _____.

   A. felicitous . . . following

   B. grotesque . . . vacuity

   C. elegant . . . repertoire

   D. graceful . . . audience

   E. ungainly . . . readership

39. Unfortunately, too many American actors in a Shakespeare play chop the verse into gobbets that are _____ to the audience and _____ to their own vocal chords.

   A. inscrutable . . . an expedience

   B. congenial . . . a danger

   C. galling . . . a panacea

   D. anodyne . . . an emollient

   E. incomprehensible . . . a threat

40. Pretending in his works to be gauche, uneducated, and _____, the real Chaucer was a sophisticated, widely read, and _____ man.

   A. provincial . . . cosmopolitan

   B. exiguous . . . vigorous

   C. avuncular . . . shrewd

   D. inept . . . dauntless

   E. incompetent . . . flaccid

41. Loyalty tests are _____ in their consequences because they distract attention from truly disloyal activities, and they _____ the criticism that true loyalty inspires.

   A. salutary . . . intimidate

   B. cautionary . . . mute

   C. pernicious . . . silence

   D. unexceptional . . . abstract

   E. perilous . . . augment

42. Briefly popular in the '40s, the '60s, and the '80s, Brazilian music is now making one of its periodic _____ into the American _____.

   A. forays . . . consciousness

   B. escapes . . . miasma

   C. appearances . . . discourse

   D. eclipses . . . scene

   E. invasions . . . liturgy

43. Unlike most historians, an anthropologist may not share the conventional _____ that the written word is more _____ than a tale told by a campfire.

    A. belief . . . prolix

    B. assumption . . . authentic

    C. idea . . . incredible

    D. tenet . . . specious

    E. canon . . . interesting

44. The _____ songs of Irving Berlin captured the uninhibited joy and _____ verve of New York in the twenties.

    A. jaunty . . . insouciant

    B. tuneful . . . timorous

    C. cacophonous . . . careless

    D. catchy . . . lurid

    E. popular . . . flagrant

45. _____ must be distinguished from _____, which is the recognition of different categories of people without the inputing of any differences in rank.

    A. Totalitarianism . . . brotherhood

    B. Modification . . . ossification

    C. Classification . . . ramification

    D. Stratification . . . differentiation

    E. Finitude . . . infinitude

Answers and Explanations for the Practice Sentence Completion Questions

Easy to Moderate

1. C. The noun here will follow from the adjective *cordial*. The best word is *amiability*, closest of the five choices to *cordiality*.

2. A. The context suggests an approaching storm, so the missing word must mean something like *threatening,* a good definition of *ominous*. Another word for *threatening* is *minatory*, not *monetary*.

3. B. The noun could be either **B** or **E**, but *indemnify* ("to compensate for a loss") makes no sense at all, whereas *replace* is a reasonable choice.

4. B. The answer is *effect . . . conflict.* A cause-and-effect relationship is set up in this sentence with a negative term required for the second blank suggested by the term *bitter.*

5. E. The title tells us the book is about the American sea history; the logical choice is *maritime*, which means "of the sea."

6. D. The context calls for a noun that means *predecessor*, something that comes first. The best choice is *precursor*.

7. C. A word that means *standards* is needed here. The best choice is *benchmarks*, which means "standards or references from which others can be measured."

8. E. The correct answer is *conciliatory*. The sentence sets up a contrast situation with the word *but*. Truman tried to do something but ended up adopting a *tougher policy. Conciliatory* is the only choice that suggests a previously weaker approach.

9. B. The answer is *vehement . . . acrimonious*. The signal words *controversial, more,* and *more* suggest a conflict that increases or intensifies. The only pair that supports these context clues is *vehement . . . acrimonious.* Even if you are not certain of the definition of *acrimonious,* the other choices can be eliminated because none of them suggests the intensification of the controversy.

10. C. The correct noun must be something that sensational television coverage would undermine in a university setting. The best choice is *credibility,* or believability.

11. B. Working from the second blank first, notice that you are looking for a word coinciding with *thought*. Only *specter* is a type of thought (something that haunts or perturbs the mind), and along with it, *holocaust* (destruction by fire) makes good sense.

12. D. The missing adjective is defined as the opposite of *too vague* by the completed sentence. Though **B** is possible, the best choice is more *specific. Restrictive* means limiting or tending to restrict, but the context calls for *specific*, that is, explicit or definite.

13. E. The context indicates the missing verb should mean *impeded*, kept from moving freely. **B**, **C**, and **D** are clearly unsuitable. The use of the adjective *seriously* eliminates *excluded* as the answer.

14. B. The first half of the sentence presents the choice between the two combatants as difficult. Choices **A**, **D**, or **E** would not clarify this description. Both **B** and **C** are plausible, but because many disputing parties would object to *interference,* choice **B** is preferable.

15. E. The context requires a transitive verb used with the preposition *to* meaning assign or ascribe. Choices **B**, **C**, and **D** do not fit these requirements. Choice **A** *attested* is used with *to* but means to certify or make clear.

16. D. The *but* indicates the power has not been annihilated, so the verb that is missing must indicate a rebirth and be used with *itself*. **A** and **C** are not used with the pronoun; **B** has the opposite of the required meaning; and though **E** is possible, **D** is clearer.

17. D. The best choice is *fail . . . operational.* The signal here is *cannot _____ to be impressed,* which should be a negative word, but the second choice should be a complement to *structural,* which is *operational.*

Average

18. **B.** The best choice will mean something like *fake* and *mountebank*. A *craven,* or a *poltroon* is a *coward*. A *charlatan* is a *mountebank*.

19. **D.** Both *roused* and *awakened* are good choices for the second blank, but the verb *shamble* (*to shuffle*) describes the gait of someone just awakened better than *swaggered.*

20. **D.** The missing noun must mean something like *motive* or *reason,* so you can eliminate **C**. To make sense, the adjective in the right choice should be derogatory, so only **D** (*negative*) is possible.

21. **C.** The first adjective will be negative (*a malign* or *a ferocious killer*), while the second must go well with *friendly* and describe a dog. The best choice is *docile,* because people do not normally describe dogs as *philanthropic.*

22. **D.** Because the traffic jams *are worse,* the second word must mean something like *increased,* so options **B**, **D**, or **E** are possibilities. The first word must mean something like *reduce,* leaving only *alleviate* as a right answer.

23. **E.** The word *low* tells us the second word must be *fallen, descended,* or *plummeted.* The words *indication, gauge,* or *barometer* fit the first blank, so the right choice must be **E**.

24. **A.** The phrase *vivacious performance* suggests that both the missing words should suggest liveliness. *Effervescence, verve,* and *sprightliness* are all promising, but only **A** has a verb that also suggests vitality.

25. **C.** Both **A** and **D** are illogical. If the company did not produce new and daring plays, it would not be described as *esoteric* or *liberal.* And if it did, it would not be *congenial* or *regressive.* Only **C** makes sense, with *provocative* fitting well with the phrase *though not the most popular.*

26. **B.** Three of the verbs might work here (*control, monopolize,* or *corner*), but only *lucrative* fits a sought-after market.

27. **D.** The first noun must mean something like *payments.* Only *reparations* fits exactly, and *ultimately* makes more sense than the four other adverbs.

28. **B.** Both **B** and **D** will fit the first blank (*snarl, rage*), but the word *provocation* (*that which incites*) is clearly better than *corroboration* (*that which makes certain*).

29. **A.** The clues of *though it lasted only half an hour* and *ponderous* point here only to *interminable* or *endless.*

30. **B.** The context suggests a word like *reproduced* or *replicated.* Given these two choices, only *melding* could describe the combining of the four notes.

31. **A.** The two verbs must both (twin blows) indicate a divisive action. The words *foster, consolidate,* and *patronize* do not fit, but choice **D** is marred by the use of *recede,* which means to move back, not to withdraw from.

32. C. The sentence makes it clear that the first missing verb should indicate a success in the election, and the second should mean received. Choices **A** and **E** do not indicate a win, but *recaptured* in **B** and *reclaimed* in **D** are faulty because of the prefix *re*.

33. B. The correct answer is *parsimonious.* The context provides a definition for the correct choice in *is more than economical.* The context also suggests the trait of being excessively frugal by the word *so.* Choices **C** and **D** would not apply because they mean poor, and the aunt is wealthy. Choice **A** is not excessive. **E** does not fit with the example of washing paper plates.

34. C. Because the passersby are *puzzled,* the missing word should have some connection with this adjective. The best choice is *enigmatic,* a synonym of *perplexing.*

Above Average to Difficult

35. E. The first word here might be **A**, **B**, or **E**, but the *grow wild* detail seems to contrast with the first clause, suggesting that *cultivated* is the best of the three. Because *remote* also makes more sense in the context of the sentence, the best answer is **E**.

36. B. The context calls for a word to describe someone who might be interested in ancient ruins. Of the five choices, the only one that fits this definition is *antiquaries,* which refers to *an expert or student of things remaining from ancient times.*

37. A. If the problem worries the industry, it cannot be *immaterial, minor,* or *evanescent.* And if the industry is worried, the pirates still must be *unabashed* (unafraid) rather than *intimidated* by crackdowns.

38. E. The first word here must have a meaning like *awkward,* but more intense. The only choices are *grotesque,* **B,** or *ungainly,* **E,** but only **E** has a noun (*readership*) that fits the second blank.

39. E. The *Unfortunately* at the beginning tells us to look for words with negative denotations. Of the five choices, only **E** has both an adjective and a noun with meanings that are unfavorable.

40. A. The pattern the sentence sets up is a specific contrast between the terms in the two series. In the first series, *provincial, inept,* and *incompetent* would fit, but only **A** gives an opposite for the second blank: *provincial* versus *cosmopolitan.*

41. C. The first missing word must be critical of loyalty tests, such as **C** or **E**. The second word must mean something like *stifle,* so only **B** and **C** are possible.

42. A. *Forays* (*a brief venture*), *appearances,* and maybe even *invasions* would seem to fit the first blank, but *discourse* and *liturgy* make no sense in this context, so the second noun must be *consciousness.*

43. **B.** You can assume that historians regard the written word as more certain than the fireside tale, so the second blank is probably *authentic.* That *assumption* fits well confirms the choice of **B**.

44. **A.** Both of these adjectives should go well with *joy* and *verve.* Though *tuneful, catchy,* or *popular* might work, only the combination of *jaunty* and *insouciant,* which means *carefree,* fits both needs.

45. **D.** In this case, the second blank is easier to fill because it is followed by a definition. *Differentiation* is *the recognition of different categories of people,* and so on. *Stratification,* which *does* imply the differences in rank that *differentiation* does not, is also appropriate.

Introduction to Reading Comprehension

Reading Comprehension questions are based on a passage ranging from approximately 150 to 400 words in length. Each passage is followed by two to four questions based on the passage. The shorter passages are usually followed by two questions.

Ability Tested

This question type tests your ability to understand, interpret, and analyze reading passages on a variety of topics. Passages are generally taken from the following categories:

- **Biological science:** passages about botany, medicine, or zoology
- **Physical science:** passages about chemistry, physics, or astronomy
- **Humanities:** passages about art, literature, music, folklore, or philosophy
- **Social studies:** passages about history, government, economics, or sociology

The questions will frequently ask you:

- about the main idea, main point, or possible title of the passage
- about information that is directly stated in the passage
- about information that is implied, suggested, or can be inferred
- to recognize applications of the author's opinions or ideas
- to evaluate how the author develops and presents the passage
- to recognize the style or tone of the passage

Basic Skills Necessary

Students who have read widely and know how to read, analyze, and interpret stated and implied information differently tend to do well on this section.

Team-LRN

Directions

Each passage is followed by questions based on its content. After reading a passage, choose the best answer to each question and choose the corresponding oval on the screen. Answer all questions about the passage on the basis of what is *stated* or *implied* in that passage. You may refer back to the passage.

Analysis

- Use only the information given or implied in a passage. Do not consider outside information, even if it seems more accurate than the given information.

- You are looking for the best answer, so be sure to read all the choices.

- If you don't know the answer, try to eliminate some choices and then take an educated guess.

- Because you may refer back to the passage, don't try to memorize everything in the passage. Read the passage focusing on the main point or purpose and the structure of the passage.

- Because the complete passage may not fit on the screen, make sure that you are comfortable with the method of scrolling on the screen.

- Each passage contains numbered lines for reference and to assist you in finding a particular spot.

Suggested Approach with Samples

Skim the first question before you read the passage. Skimming could give you a clue about what to look for when reading the passage. This is called *pre-reading*. (Notice that you can't skim other questions because you can't return to a question.)

Suppose that the first question was as follows:

---

1. The author's main purpose in writing this passage is to

  A.

  B.

  C.

  D.

  E.

As you preread the question, your focus should be on the main purpose. This is a main-point question. Notice that you should not spend time reading the choices when you preread. Preread the question only, focus on the key word(s), and then read the passage.

Suppose that the first question was as follows:

1. The author implies which of the following about the New Jersey progressives?

   A.

   B.

   C.

   D.

   E.

As you preread the question, your focus should be on the words *author implies . . . about New Jersey progressives.* This tells you to watch for what the author is saying "between the lines" about New Jersey progressives. Again notice that you only preread the question, and not the choices. Remember: You will only be able to preread the first question to each passage given.

As you read the following passage, focus on "what the author is really saying," or "what point the author is trying to make." Also, pay attention to "how the passage is put together"—the structure.

Passage

Woodrow Wilson won his first office in 1910 when he was elected governor of New Jersey. Two years later he was elected president in one of the most rapid political rises in our history. For a while Wilson had practiced law but found it both boring and unprofitable; then he became a political scientist and finally president of
(5) Princeton University. He did an outstanding job at Princeton, but when he was asked by the Democratic boss of New Jersey, Jim Smith, to run for governor, Wilson readily accepted because his position at Princeton was becoming untenable.

Until 1910, Wilson seemed to be a conservative Democrat in the Grover Cleveland tradition. He had denounced Bryan in 1896 and had voted for the National
(10) Democratic candidate who supported gold. In fact, when the Democratic machine first pushed Wilson's nomination in 1912, the young New Jersey progressives wanted no part of him. Wilson later assured them that he would champion the progressive cause, and so they decided to work for his election. It is easy to accuse Wilson of political expediency, but it is entirely possible that by 1912 he had
(15) changed his views as had countless other Americans. While governor of New Jersey, he carried out his election pledges by enacting an impressive list of reforms.

Wilson secured the Democratic nomination on the forty-sixth ballot. In the general campaign, Wilson emerged as the middle-of-the-road candidate—between the conservative William H. Taft and the more radical Theodore Roosevelt. Wilson
(20) called his program the New Freedom, which he said was the restoration of free competition as it had existed before the growth of the trusts. In contrast, Theodore Roosevelt was advocating a New Nationalism, which seemed to call for massive federal intervention in the economic life of the nation. Wilson felt that the trusts should be destroyed, but he made a distinction between a trust and legitimately
(25) successful big business. Theodore Roosevelt, on the other hand, accepted the trusts as inevitable but said that the government should regulate them by establishing a new regulatory agency.

On the "old" paper and pencil GRE, you could read actively by marking (circling, underlining, and so on) important items in the passage. But because you cannot mark on the computerized GRE, you must learn to focus on the main point(s) and the structure. Knowing the structure will help you go back into the passage and find things quickly.

Always look for the main point of the passage. There are many ways to ask about the main point of a passage. What is the main idea? What is the best title? What is the author's purpose?

Sample

> **1.** The author's main purpose in writing this passage is to
>
> **A.** argue that Wilson is one of the great U.S. presidents.
>
> **B.** survey the difference between Wilson, Taft, and Roosevelt.
>
> **C.** explain Wilson's concept of the New Freedom.
>
> **D.** discuss some major events of Wilson's career.
>
> **E.** suggest reasons that Wilson's presidency may have started World War I.

The best answer is **D**. Choices **A** and **E** are irrelevant to the information in the passage, and choices **B** and **C** mention secondary purposes rather than the primary one.

Some information is not directly stated in the passage but can be gleaned by reading between the lines. This implied information can be valuable in answering some questions.

Sample

> **2.** The author implies which of the following about the New Jersey progressives?
>
> A. They did not support Wilson after he was governor.
>
> B. They were not conservative Democrats.
>
> C. They were more interested in political expediency than in political causes or reforms.
>
> D. Along with Wilson, they were supporters of Bryan in 1896.
>
> E. They particularly admired Wilson's experience as president of Princeton University.

The best choice is **B**. In the second paragraph, Wilson's decision to champion the progressive cause after 1912 is contrasted with his earlier career, when he seemed to be a conservative Democrat. Thus, you may conclude that the progressives, whom Wilson finally joined, were not conservative Democrats, as was Wilson earlier in his career. Choices **A** and **D** contradict information in the paragraph, and choices **C** and **E** are not suggested by any information given in the passage.

Watch for important conclusions or information that might support a conclusion.

Sample

> **3.** The passage supports which of the following conclusions about the progress of Wilson's political career?
>
> A. Few politicians have progressed so rapidly toward the attainment of higher office.
>
> B. Failures late in his career caused him to be regarded as a president who regressed instead of progressed.
>
> C. Wilson encountered little opposition after he determined to seek the presidency.
>
> D. The League of Nations marked the end of Wilson's reputation as a strong leader.
>
> E. Wilson's political allies were Bryan and Taft.

The best choice is **A**. This choice is explicitly supported by the second sentence in paragraph 1, in which you are told that Wilson was *elected president in one of the most rapid political rises in our history.*

Understand the meaning and possible reason for using certain words or phrases in the passage. And take advantage of the line numbers given.

Sample

> **4.** In the statement "Wilson readily accepted because his position at Princeton was becoming untenable" (line 7), the meaning of "untenable" is probably which of the following?
>
> **A.** unlikely to last for years
>
> **B.** filled with considerably less tension
>
> **C.** difficult to maintain or continue
>
> **D.** filled with achievement that would appeal to voters
>
> **E.** something he did not have a tenacious desire to continue

The best choice is **C**. On any reading comprehension test, it is best to be alert to the positive and negative connotations of words and phrases in each passage, as well as in the questions themselves. In the case of *untenable,* the prefix *un-* suggests that the word has a negative connotation. The context in which the word occurs does so as well. Wilson *left* his position at Princeton; therefore, you may conclude that the position was somehow unappealing. Only two of the answer choices, **C** and **E**, provide a negative definition. Although choice **E** may attract your attention because *tenacious* looks similar to *tenable,* the correct choice is **C**, which is the conventional definition of *untenable.*

Your answer choice must be supported by information either stated or implied in the passage. Eliminate those choices that are not supported by the passage.

Sample

> **5.** According to the passage, which of the following was probably true about the presidential campaign of 1912?
>
> **A.** Woodrow Wilson won the election by an overwhelming majority.
>
> **B.** The inexperience of Theodore Roosevelt accounted for his radical position.
>
> **C.** Wilson was unable to attract two-thirds of the votes but won anyway.
>
> **D.** There were three nominated candidates for the presidency.
>
> **E.** Wilson's New Freedom did not represent Democratic interests.

The best choice is **D**. Choices **A**, **B**, and **C** contain information that is not addressed in the passage. You may eliminate them as irrelevant. Choice **E** contradicts the fact that Wilson was a Democratic candidate. The discussion of Taft and Roosevelt as the candidates who finally ran against Wilson for the presidency supports choice **D**.

A Shorter Passage

The fact that bacteria are capable of chemical communication first emerged from investigations into marine bacteria able to glow in the dark. In 1970 Kenneth H. Nealson and John Woodland Hastings of Harvard University observed that luminous bacteria in culture do not glow at a constant intensity. In fact, they emit no
(5) light until the population reaches a high density.

Nealson and Hastings knew the light resulted from chemical reactions catalyzed by the enzyme luciferase. They postulated that this enzyme was ultimately controlled not by some mechanism inside each bacterial cell but by a molecular messenger that traveled between cells. Once inside target cells, the messenger,
(10) which the researchers called autoinducer, could induce expression of the genes coding for luciferase and for the other proteins involved in light production; that is, autoinducer could stimulate synthesis of the encoded proteins and, thus, of light. Their theory met with skepticism at first but has since been confirmed and expanded.

> **Read all the choices because you are looking for the best answer given.**

Sample

> **6.** According to the passage, Nealson and Woodland's research was instrumental in indicating that
>
> **A.** bacteria communicate through molecular messengers that travel between cells.
>
> **B.** luminous bacteria glow not at a constant density but at various densities.
>
> **C.** bacteria are genetically coded by the autoinducer.
>
> **D.** the molecular messenger luciferase causes bacteria to glow at high densities.
>
> **E.** the autoinducer, not the enzyme luciferase as was previously believed, produces the luminosity of certain marine bacteria.

The best choice is **A**. Although the research focused on marine bacteria that glow, its broader significance is that it shows the chemical communication between bacteria. Choice **B** is the observation that led to the theory but is not the best answer. Choice **C** is inaccurate; an autoinducer does not code genes but induces their

expression. Choice **D** is also incorrect. The molecular messenger that causes bacteria to glow is not the enzyme luciferase. Choice **E** might seem correct at first reading, but although the autoinducer allows the expression of the light-producing enzymes such as luciferase, it doesn't produce light itself.

Some questions deal with specific detail in the passage. Know where to locate this detail.

Sample

> **7.** Which of the following are characteristics of the autoinducer involved in light production by marine bacteria?
>
>   I.   It catalyzes chemical reactions in bacterial cells.
>
>   II. It stimulates synthesis of certain proteins.
>
>   III. It acts as a messenger between enzymes and bacteria.
>
>   **A.**   I and II only
>
>   **B.**   II and III only
>
>   **C.**   II only
>
>   **D.**   III only
>
>   **E.**   I, II, and III

The best choice is **C**. Only II is correct (line 12). Luciferase, not the autoinducer, catalyzes the reactions that cause light, making I incorrect (lines 6–7). III is incorrect because the autoinducer acts as a messenger between bacteria cells and (lines 8–9), not between enzymes and bacteria.

Another Short Passage

History gives a cruel experience of human nature, in showing how exactly the regard due to the life, possessions, and entire earthly happiness of any class of persons, was measured by what they had the power of enforcing; how all who made any resistance to authorities that had arms in their hands, however dreadful might
(5) be the provocation, had not only the law of force but all other laws, and all the notions of social obligation against them; and in the eyes of those whom they resisted, were not only guilty of crime, but of the worst of all crimes, deserving the most cruel chastisement that human beings could inflict. The first small vestige of a feeling of obligation in a superior to acknowledge any right in inferiors, began
(10) when he had been induced, for convenience, to make some promise to them. Though these promises, even when sanctioned by the most solemn oaths, were for many ages revoked or violated on the most trifling provocation or temptation, it is probable that this, except by persons of still worse than average morality, was seldom done without some twinges of conscience.

Sample

> **8.** The author implies that laws are based on
>
> **A.** the necessity of protecting the weakest members of a society.
>
> **B.** the interests of those in a society who possess the most power.
>
> **C.** the notions of social obligation that are passed from generation to generation.
>
> **D.** promises made to those without power by those with the most power.
>
> **E.** the belief that "earthly happiness" is the right of everyone in society, including those who resist authority.

The best choice is **B**. The author makes it clear that the person with the most power has "not only the law of force but all other laws" behind him, implying that the law itself exists to protect the interests of the powerful. Choices **A** and **E** are incorrect; in fact, the passage suggests the contrary. Choice **C** is also inaccurate; "all the notions of social obligation" support the powerful, according to the passage. Choice **D** might be tempting, but according to the author, promises are made only for the convenience of the powerful; laws are made to protect their interests.

Try to recognize the tone and purpose of the passage. Would the author agree or disagree with something?

Sample

> **9.** The author of this passage would be most likely to agree with which of the following statements?
>
> **A.** In order to prevent chaos in a society, authority must be strong and unquestioned.
>
> **B.** All men, whether weak or strong, desire justice in their dealings with others.
>
> **C.** Social obligation is the most important factor ensuring protection of the weak by the strong.
>
> **D.** Rights are granted to those without power when to do so will benefit those with power.
>
> **E.** In the past, when rights have been granted to people, only the most extreme circumstances have led to their being rescinded.

The best choice is **D**. According to the passage, the rights of the weak were ac-
knowledged only when the strong were induced to do so for their own conve-
nience (lines 8–10). Choice **A** is irrelevant; the author doesn't advocate strong,
unquestioned authority; he only defines what he sees as the realistic situation.
Choice **B** is incorrect; the author states that the powerful are concerned with their
own interests, not with justice. Choice **C** is also incorrect; notions of social oblig-
ation are, like laws, based on the needs of the powerful. Choice **E** is refuted in the
passage; the author states that rights have been "revoked or violated on the most
trifling provocation."

Analyzing Another Long Passage

As the Moorish states in all parts of Spain fell into progressive political, military,
and literary decadence, the atmosphere of the established Christian centers be-
came increasingly more favorable to an intensive and varied literary development.
The growth of cities had produced a comparatively urban and cultured population
(5) with sufficient leisure and security to find time for literary entertainment. The
growth of commerce had brought Spaniards into contact with other societies that
had developed original and stimulating literary traditions. The growth of a recog-
nized and responsible central government, following the definitive unification of
Castile and León under Ferdinand III early in the thirteenth century, had provided
(10) a court or central cultural focus toward which men of literary ability could gravi-
tate. The growing self-awareness of the writer as a unique creative personality,
from the anonymity of the *cantares de gesta* to the tentative identification we see
in the poetry of Berceo, to intense and affirmative individualism of the later
mester de clerecía in Juan Ruiz and López de Ayala, demands an ever broader
(15) field in which to realize and fulfill itself. In obedience to this sort of aesthetic
need and nurtured on the expanding possibilities of a settled and prospering soci-
ety, the fifteenth century represents a period of great fecundity in the development
and widening of literary genres.

The medieval *cantar de gesta,* which had so magnificently served the needs of a
(20) society of embattled warriors, undergoes a major change, possibly through the in-
fluence of the *mester de clerecía.* In the new society there was neither time, place,
nor public for the recitation of the long and usually complex epic poems, but the
great deeds, the great heroes still held their magic for the general public. These
survive in a new poetic form, the *romances.* The anonymous *romances* are short
(25) poems of regular meter and assonance that capture an intense and dramatic mo-
ment—of sorrow, of defeat, of parting, of return—in simple and direct language.
They are generally fragmentary, combining lyricism and narration taken from the
dramatic high points of the epics. Some critics have thought that the oldest *ro-
mances* represent a survival of the raw material from which the long *cantares*
(30) grew, but the more generally accepted opinion is that they represent the opposite
process; as the old *cantares* fell into oblivion, the best moments and the most stir-
ring passages were conserved and polished and given new life.

Supporting this view is the fact that the earliest *romances* go back only to the middle of the fourteenth century, a time in which the *cantares* were in a period of fi-
(35) nal decadence and the oldest epic poems already forgotten. They share the realism and directness of the *cantares*, and also the greater polish and lyricism of the *mester de clerecía*. Some thousands of them have been collected and not all relate to the material of the Spanish epics.

Be careful to spot the word "EXCEPT" in a question.

Sample

10. According to the passage, all of the following probably contributed to increasing the number of literary genres in fifteenth century Spain EXCEPT

   A. growth of Spanish cities.

   B. Spaniards' increased contact with other societies.

   C. conflicts between the Moorish and Christian states.

   D. unification of Castile and León.

   E. a change in the writer's view of himself.

The best choice is **C**. The passage indicates that more literary genres developed in Spain because the Christian states provided a "settled and prospering society" (line 16)—not because of conflicts between Moors and Christians. Choices **A**, **B**, **D,** and **E** are all mentioned as contributing to the developing literary climate in fifteenth century Spain.

Use an elimination strategy. That is, immediately eliminate answers that are irrelevant, not addressed, or just wrong. Do not consider them again.

Sample

11. The passage implies that

   A. the *cantares* focus on heroic deeds associated with war, whereas the *romances* are concerned with peace.

   B. the authors of *romances* were well-educated, recognized writers.

   C. the influence of Moorish culture on the *romance* was less strong than it was on the *cantares*.

   D. the *romances* probably influenced the *mester de clerecía.*

   E. the *cantares* were often recited to audiences.

The best choice is **E**. The implication in lines 21–23 is that the *cantares* were more often recited in public than read in private. Choice **A** is incorrect. The *romances* combine lyricism with narration taken from the dramatic high points of the epics; nothing suggests they are concerned with peace rather than war. Notice that defeat is mentioned as one of the moments captured by *romances*. Eliminate choice **A**. Choice **B** is contradicted in line 24, where the *romances* are characterized as anonymous. Eliminate choice **B**. The passage does not refer to Moorish influence on any of the genres, so choice **C** can be eliminated. Choice **D** is a reversal of what the passage suggests (line 19–21). Eliminate choice **D**. Although only choice **E** remains, you should read it anyway to make sure that it is correct and that you have not misread one of the other choices.

> **Some questions ask you to reason from the information given.**

Sample

---

12. According to the passage, the theory that the *romances* come from the same raw material as the *cantares* is questionable because

    A. *romances* came into being only after the decline of the *cantares*.

    B. the subject matter of *romances* is the lives of everyday people rather than the lives of heroes.

    C. *romances* are more lyrical and complex than *cantares*.

    D. the *cantares* were unavailable to the writers of the *romances*.

    E. foreign influences are prevalent in the *romances* but not in the *cantares*.

The best choice is **A**. According to the author, the *cantares* were in a period of "final decadence" at the time the *romances* were born, so it is unlikely that they came from the same raw material. Choice **B** is incorrect; the subject matter of *romances* was not the lives of everyday people. In line 22 the *cantares* are described as "usually complex," whereas in line 26 the *romances* are characterized as written in "simple and direct" language, making choice **C** also a bad choice. Because the subject matter of *romances* often derives from the epics, choice **D** is also incorrect. Foreign influences on the genres, choice **E**, are not addressed in the passage.

> **Realize what you can and can't infer from the passage. Watch for answers that are too general or too specific.**

Sample

> **13.** From the passage the reader can infer that
>
>   **A.** before the fifteenth century most Spaniards were illiterate.
>
>   **B.** the *cantar* was the only literary genre in Spain before 1600.
>
>   **C.** the decline of the Moorish states in Spain resulted in the destruction of much early Spanish literature.
>
>   **D.** fifteenth century Spanish culture benefited from outside influences.
>
>   **E.** the *mester de clerecía* were more popular than the *cantares*.

The best choice is **D**. The author cites Spaniards' contact with other societies as a positive influence on Spain's literary development (lines 5–7). The statements in both choices **A** and **B** are far too sweeping, based on information in the passage. Choice **C** is not mentioned or implied, and nothing suggests the *mester de clerecía* were more popular than the epics, choice **E**.

Other Important Strategies

- Make sure that the answer you select "answers the question." Some true statements are not the correct answers.

- Don't get stuck on the passage or any one question.

- Try to recognize the tone and purpose of the passage.

- Be careful to spot the word "EXCEPT" in a question.

- Use an elimination strategy. Immediately eliminate answers that are irrelevant, not addressed, or just wrong.

- As you read, also watch for names, definitions, places, and numbers, but do not try to memorize the passage.

- Skim the first question before you read the passage. (Notice that you can't skim other questions because you can't scroll to those questions.)

- As you read the passage, focus on "what the author is really saying" or "what point the author is trying to make." Also pay attention to "how the passage is put together"—the structure.

- Some information is not directly stated in the passage but can be gleaned by reading between the lines. This implied information can be valuable in answering some questions.

- Watch for important conclusions or information that might support a conclusion.

- Understand the meaning and possible reason for using certain words or phrases in the passage.

- Take advantage of the line numbers given next to the passage.

- Your answer choice must be supported by information either stated or implied in the passage.

- Read all the choices because you are looking for the best answer given.

- Know where to locate specific detail in the passage.

Practice Reading Comprehension Passages and Questions

Questions 1–8

The railroads played a key role in the settlement of the West. They provided relatively easy access to the region for the first time, and they also actively recruited farmers to settle there. The railroads are criticized for their part in settling the West too rapidly, with its resultant economic unrest. Of course there were abuses
(5) connected with building and operating the railroads, but it must be pointed out that they performed a useful service in extending the frontier and helping to achieve national unity.

The real tragedy of the rapid settlement of the Great Plains was the shameful way in which the American Indians were treated. Threatened with the destruction of
(10) their whole mode of life, the Indians fought back savagely. Justice was almost entirely on the Indians' side. The land was clearly theirs; frequently their title was legally certified by a treaty negotiated with the federal government. The Indians, however, lacked the military force and the political power to protect this right. Not only did white men encroach upon the Indians' hunting grounds, but they
(15) rapidly destroyed the Indians' principal means of subsistence—the buffalo. By 1869, the railroads had cut the herd in half, and by the middle of the 1880s, both the southern and northern herd were eliminated. The white man frequently killed the buffalo merely for sport, leaving the valuable carcass to rot in the sun.

The plains Indians were considered different from the Indians encountered by the
(20) English colonists on the Atlantic coast. Mounted on horses, typical plains Indians were fierce warriors who could shoot arrows with surprising accuracy while galloping at top speed. Although they quickly adapted themselves to the use of the rifle, the Indians were not equal to the firepower of the United States Army and thus were doomed to defeat.

(25) Theoretically, at least, the government tried to be fair to the Indians, but all too often the Indian agents were either too indifferent or corrupt to carry out the government's promises conscientiously. The army frequently ignored the Indian Bureau and failed to coordinate its policies with the civilians who were nominally in charge of Indian affairs. The settlers hated and feared the Indians and wanted
(30) them exterminated. This barbaric attitude is certainly not excusable, but it is understandable in the context of the time.

1. The author's attitude toward the treatment of American Indians by whites is one of

    A. qualified regret.

    B. violent anger.

    C. strong disapproval.

    D. objective indifference.

    E. unfair bias.

2. The author implies which of the following about the forces at work during the settlement of the Great Plains?

    A. The federal government represented the moral use of law.

    B. Justice was overcome by military firepower.

    C. Attempts by the government to be fair were rejected by the Indians.

    D. The settlers' hatred and fear was offset by the Indians' attempts at kindness.

    E. The Indians and the white settlers shared a sporting interest in the hunting of buffalo.

3. Which of the following is concrete evidence that the white settlers did not need the buffalo for their own subsistence, as did the Indians?

    A. More than half of the great buffalo herd had disappeared by 1869.

    B. Nearly 15 million buffalo were killed within 20 years.

    C. Buffalo carcasses were left rotting in the sun by whites.

    D. The railroad brought necessary food and supplies to the white settlers from the East.

    E. The white settlers had their own hunting grounds separate from the Indians'.

4. What is the point of the comparison between the plains Indians and the Indians encountered on the Atlantic coast?

   A. The Atlantic coast Indians were not as abused by white settlers.

   B. Because they were considerably better warriors than the Atlantic coast Indians, the plains Indians were a match for the United States military.

   C. If Indians such as those on the Atlantic coast had populated the plains, there would have been no bloodshed of the white settlement.

   D. The Indians encountered by English colonists posed no violent threat to the colonists.

   E. The Atlantic coast Indians were unfamiliar with horses.

5. Which of the following characteristics of the passage suggests that the abuse of the Indians is a more significant topic for the author than the beneficial role of the railroads?

   A. the statement that the railroads "are criticized for their part in settling the West too rapidly" (lines 3–4).

   B. the amount of discussion devoted to the abuse of the Indians.

   C. the reliance on statistical details in both the first and second paragraphs.

   D. the mention of the plains Indians' ability to fight.

   E. the perception that the achievement of national unity was one of the services that the railroad performed.

6. The author of the passage would most likely disagree that

   A. the United States government's policies toward the American Indians were shameful.

   B. the land that the Indians fought to retain belonged to them.

   C. numerous abuses were among the results of the railroads' rapid spread westward.

   D. some American Indian tribes used sophisticated weapons brought by settlers.

   E. the United States army could not be considered a friend of the American Indian.

7. It can be inferred from the passage that the purpose of the Indian Bureau was to

    A. try Indians who violated the laws of the new territory.

    B. establish reservations where the peaceful American Indians would live.

    C. assist with Indian affairs and policies of the government regarding the American Indian.

    D. bring to justice white settlers who treated the Indians in a savage or unlawful manner.

    E. assist the Indians in learning a new method of procuring food to rely less on buffalo meat.

8. All of the following are presented as overt enemies of the Indians EXCEPT the

    A. railroads.

    B. white hunters.

    C. army.

    D. Indian agents.

    E. western settlers.

Questions 9–12

In clean air, the human lung capacity will increase for the first 20 years of life, then begin to decrease slowly. But in areas with heavy air pollution, lung capacity growth is slowed. Breathing high levels of ozone or of sulfur and nitrogen oxides lessens the growth of lung capacity and increases the speed of its deterioration in
(5) later life. Adults who spend all their lives in bad air may have as much as 75% less lung capacity than those who have lived in unpolluted air. The loss of both the large and small airways of the lungs, narrowed by the unclean air, results in the inefficient supply of oxygen to the organs of the body. The lungs do not re-cover over time, and the ozone of Los Angeles and the sulfates and hydrocarbons
(10) of industrialized eastern cities are equally pernicious. The victims of air pollution are unlikely to be aware of what they have lost; they are so accustomed to shorter breath and coughs that they vigorously deny that they have been affected at all.

9. Which of the following most accurately describes this passage?

    A. a description of a specific experiment.

    B. a summary report of scientific findings.

    C. a recommendation for improving health.

    D. a confirmation of an earlier theory.

    E. a refutation of an earlier theory.

10. According to the passage, the capacity of the human lung would be greatest if a person were

    A. 40 years old and had not been exposed to unclean air until the age of 30.

    B. 40 years old and had lived without exposure to unclean air.

    C. 20 years old and had lived without exposure to unclean air.

    D. 20 years old and had been exposed to unclean air for 5 years.

    E. 10 years old and had been exposed for 1 year to heavy amounts of ozone.

11. It can be inferred from the passage that denizens of areas with heavy air pollution have not been more active in attempting to improve air quality because

    A. they fear the costs of cleaning the air may increase their taxes.

    B. the federal government does not encourage clean air vigorously enough.

    C. the dangers of air pollution have only recently been discovered.

    D. they are unaware of the harm unclean air has done.

    E. there are rivalries between local, state, and federal clean air agencies.

12. According to the passage, middle-aged adults who have lived all their lives in a city with heavy air pollution from sulfur and nitrogen oxides may have

    I. as limited a lung capacity as life-long residents of Los Angeles of the same age.

    II. lung capacity less than that of life-long residents of an industrialized city in Eastern Europe.

    III. significantly reduced oxygen supplied to their vital organs.

    A. I only

    B. II only

    C. III only

    D. I and II only

    E. I and III only

Questions 13–16

Let us consider a hypothetical pair of communicants, utterer and interpreter, from the operation point of view. We shall assume that our utterer has six hats: red, blue, yellow, black, gray, and white. If the rods and cones (the tiny end organs packed together on what corresponds to the sensitive films in the stereoscopic or

(5) double-lens camera) of the retinae of his eyes are not defective, he will be able to see that the six hats differ even though they are of the same shape and material. If we reduce the light so that he can barely see, the white and the yellow will seem to be the same. But as the light grows stronger he will be able to see that the red, blue, and yellow affect him differently from black, gray, and white.

(10) He now has sufficient experience (remember, this is all grossly oversimplified) to conceive of color and shade. But he can also distinguish the red hat from the blue and yellow hats, the yellow from the blue and red, and so forth. He is thus ready for the concepts red, blue, and yellow if, for example, we provide him with a red feather, a blue feather, and a yellow feather. Indeed, he may have the human im-
(15) pulse to decorate the hat with the corresponding feather. And if the feathers seem to have more in common with the white hat than the color hats have in common with the white hat, he can see that his concept of shade will determine the difference between the two reds, the two blues, or the two yellows, and he will have need of the concepts of light and dark.

(20) As we increase the number of shades he will require relation concepts like those expressed in the suffixes -er and -est. By repeating the conventional symbols "hat" and "red" with the red hat, he conditions the sound of the words to the sight of the hat. If he sees that the relation of each feather to its hat is similar to the other two, he has need of a relation concept like the one expressed by the preposi-
(25) tion "in," and he is thus prepared to say to himself "light red feather in dark red hat." Now in the dark he is not able to tell one hat or one feather from another but in the middle of a moonless night he is able to think "red feather in red hat" simply by uttering the appropriate symbols to himself. And with his human impulse to try new combinations, he can even think, "yellow feather in blue hat" without
(30) ever having seen them thus combined.

13. By discussing the different effects of reduced and increased light, the author is

    I. pointing to a limitation in the dependence on perception by sight.

    II. preparing to discuss the concepts of light and dark.

    III. laying the ground for the distinction between what can be seen and what can be thought.

A. III only

B. I and II only

C. I and III only

D. II and III only

E. I, II, and III

14. Of the following, the most plausible criticism that could be directed at the "hats" example is that it is

    A. too difficult to follow.

    B. irrelevant.

    C. too hypothetical.

    D. too dependent on the esoteric language.

    E. unreasonable.

15. According to the passage, the acquisition of symbols allows us not only to communicate, but also to

    A. argue logically.

    B. imagine.

    C. respond to unconditioned stimuli.

    D. respond to conditioned stimuli.

    E. decorate hats.

16. The passage is most relevant to which of the following areas of study?

    A. aesthetics of logic.

    B. literature and history.

    C. sociology.

    D. linguistics and psychology.

    E. anthropology.

Questions 17–24

Many people seem to think that science fiction is typified by the covers of some of the old pulp magazines; the Bug-Eyed Monster, embodying every trait and feature that most people find repulsive, is about to grab, and presumably ravish, a sweet, blonde, curvaceous, scantily-clad Earth girl. This is unfortunate because it
(5) demeans and degrades a worthwhile and even important literary endeavor. In contrast to this unwarranted stereotype, science fiction rarely emphasizes sex, and when it does, it is more discreet than other contemporary fiction. Instead, the basic interest of science fiction lies in the relation between man and his technology and between man and the universe. Science fiction is a literature of change and a
(10) literature of the future, and while it would be foolish to claim that science fiction is a major literary genre at this time, the aspects of human life that it considers make it well worth reading and studying—for no other literary form does quite the same things.

(15) What is science fiction? It is a literary subgenre that postulates a change (for human beings) from conditions as we know them and follows the implications of these changes to a conclusion. That science fiction is a literary subgenre is a point that is often overlooked. Specifically, science fiction is either a short story or a novel. There are only a few poems and plays that could be called science fiction, with Karel Capek's *RUR* being the only play that is well known.

(20) To say that science fiction is a subgenre of prose fiction is to say that it has all the basic characteristics and serves the same basic functions in much the same way as prose fiction in general. Everything that can be said about prose fiction, in general, applies to science fiction. Every piece of science fiction, whether short story or novel, must have a narrator, a story, a plot, a setting, characters, language, and (25) theme. And like any prose, the themes of science fiction are concerned with interpreting man's nature and experience in relation to the world around him. Themes in science fiction are constructed and presented in exactly the same ways that themes are dealt with in any other kind of fiction. They are the result of a particular combination of narrator, story, plot, character, setting, and language. In short, (30) the reasons for reading and enjoying science fiction, and the ways of studying and analyzing it, are basically the same as they would be for any other story or novel.

17. Although few examples of science fiction written before 1900 exist, you can infer that it has been most popular in the twentieth century because

    A. with the growth of literacy, the size of the reading public has increased.

    B. competition from television and film has created a demand for more exciting fiction.

    C. science fiction is easier to understand than other kinds of fiction.

    D. the increased importance of technology in our lives has given science fiction an increased relevance.

    E. other media have captured the large audience that read novels in the nineteenth century.

18. According to the definition in the passage, a fictional work that places human beings in a prehistoric world inhabited by dinosaurs

    A. cannot properly be called science fiction because it does not deal with the future.

    B. cannot properly be called science fiction because it does not deal with technology.

    C. can properly be called science fiction because it is prose fiction.

    D. can properly be called science fiction because it places people in an environment different from the one we know.

    E. can properly be called science fiction because it deals with humans' relation to the world around them.

19. Science fiction is called a literary subgenre because

    A. it is not important enough to be a literary genre.

    B. it cannot be made into dramatic presentation.

    C. it has its limits.

    D. it shares characteristics with other types of prose fiction.

    E. to call it a "genre" would subject it to literary jargon.

20. From the passage, you can infer that science fiction films based upon ideas that have originally appeared in other media are chiefly adaptations of

    A. short stories.

    B. plays.

    C. novels.

    D. poems.

    E. folk tales.

21. The author believes that, when compared to other literary genres, science fiction is

    A. deficient in its use of narrators.

    B. unable to be adapted to drama.

    C. a minor but worthwhile kind of fiction.

    D. more concerned with plot than with theme.

    E. in need of a unique literary approach if it is to be properly understood.

22. The emphasis on theme in the third paragraph of the passage suggests that the author regards which of the following as an especially important reason for reading science fiction?

    A. the discovery of meaning.

    B. the display of character.

    C. the beauty of language.

    D. the psychological complexity.

    E. the interest of setting.

23. One implication of the final sentence in the passage is that

    A. the reader should turn next to commentaries on general fiction.

    B. there is no reason for any reader not to like science fiction.

    C. the reader should compare other novels and stories to science fiction.

    D. there are reasons for enjoying science fiction.

    E. those who can appreciate other prose fiction can appreciate science fiction.

24. An appropriate title for this passage would be

    A. On the Inaccuracies of Pulp Magazines.

    B. Man and the Universe.

    C. Toward a Definition of Science Fiction.

    D. A Type of Prose Fiction.

    E. Beyond the Bug-Eyed Monster.

Questions 25–31

Let us take the terms "subjective" and "objective" and determine whether we can make up our minds what we mean by them in a statement like this: "Philosophers and artists are subjective; scientists, objective." First, the two terms make up a semantic pair. The one has no meaning without the other. We may define each by
(5) antonym with the other. We may define them by synonym by translating the last syllable and say that "subjective" pertains to a subject, and "objective" pertains to an object. By operation analysis we may say that subjects perceive or conceive objects in the process of knowing. The word "knowing" reminds us that we are talking about the central nervous system and should waste no time in examining
(10) our terms for their sensory, affective, and logical components. The terms are primarily logical. What, then, is the basic logical relation that establishes whatever meaning they have? What goes on in the world when a poet is being subjective, and how does it differ from what goes on when a scientist is being objective?

When the poet sings "Drink to me only with thine eyes," he is responding imme-
(15) diately or in retrospect to an object, his beloved, outside himself; but he is fundamentally concerned with the sensations and emotions which that object stimulates in him; and whether the object justifies his praise in the opinion of others, or indeed whether there actually is such an object, is quite irrelevant to his purpose, which is the weaving of a beautiful pattern of sound and imagery into a richly af-
(20) fective concept of feminine loveliness. This is to be subjective.

Now the scientist is primarily concerned with the identity and continuity of the external object that stimulates his response. It need not seem absurd to locate the Eiffel Tower, or Everest, or the Grand Canyon, for that matter, in the mind

because it is so perfectly obvious that they can exist as the Eiffel Tower, Everest,
(25) or the Grand Canyon nowhere else. Perhaps we can move a little closer to our def-
inition of "objective" by suggesting a distinction between an object and thing. Let
us define object as the external cause of a thing. Whether objects "exist" is obvi-
ously not discussable, for the word "object" as used here must necessarily stand
not for a thing but for a hypothesis. There is, for example, no way of telling
(30) whether objects are singular or plural, whether one should say the stimulus of the
Eiffel Tower experience or the stimuli of the Eiffel Tower experience. If then, it is
impossible even for the scientist to escape the essential subjectivity of his sensa-
tions, generalizations, and deductions, what do we mean by calling him objective?

25. Which of the following is NOT a semantic pair?

    A. chaos/order

    B. fact/fiction

    C. sitting/standing

    D. light/darkness

    E. virtue/vice

26. Which of the following pairs best exemplifies the subjective/objective
opposition as defined by the passage?

    A. art/philosophy

    B. knower/known

    C. object/thing

    D. stimulus/stimuli

    E. emotion/sensation

27. The passage refers to "Drink to me only with thine eyes" (line 14) primarily
in order to

    A. suggest the affective powers of sound and imagery.

    B. exemplify the objective.

    C. exemplify the subjective.

    D. demonstrate how art can bestow universal significance on an object.

    E. illustrate the difference between literal and metaphorical language.

28. Given the content of the first and second paragraphs, the reader expects that the third paragraph will

   A. explain how the scientist is objective.

   B. define the identity and conformity of external objects.

   C. analyze what it is to be subjective.

   D. discriminate between an object and a thing.

   E. explore the implications of objectivity.

29. According to the passage, "objectivity" depends on the assumption that

   A. discrete objects exist external to the mind.

   B. one's vocation in life should be logical.

   C. subjectivity is a cognitive weakness.

   D. science is a viable discipline.

   E. the Eiffel Tower is a singular stimulus, not a diffuse experience.

30. Faced with this statement, "What you see is just in your head," the author of the passage would be likely to

   A. strongly disagree.

   B. agree that the statement is probably true.

   C. argue against the appropriateness of the word "just."

   D. assume that the person making the statement is not a scientist.

   E. argue that what is seen cannot be located outside or inside the mind.

31. According to the definitions of the third paragraph, which of the following is (are) true of an object?

   I. The reality of an object is hypothetical.

   II. Whether objects are plural or singular is uncertain.

   III. An object is the external cause of a thing.

   A. III only

   B. I and II only

   C. I and III only

   D. II and III only

   E. I, II, and III

Questions 32–35

As Augustine contemplates his own nature as well as that of his fellow men, he sees wickedness and corruption on every hand. Man is a sinful creature and there is nothing that is wholly good about him. The cause is to be found in original sin, which mankind inherited from Adam. If Adam is regarded as a particular human (5) being, it would make no sense at all to blame his descendants for the mistakes that he made. But Adam is interpreted to mean the universal man rather than a particular individual. Because the universal necessarily includes all of the particulars belonging to the class, they are involved in whatever the universal does.

The total corruption of human nature as taught by Augustine did not mean that (10) man is incapable of doing any good deeds. It meant that each part of his nature is infected with an evil tendency. In contrast to the Greek notion of a good mind and an evil body, he held that both mind and body had been made corrupt as a result of the fall. This corruption is made manifest in the lusts of the flesh and also in the activities of the mind. So far as the mind is concerned, the evil tendency is present (15) in both the intellect and in the will. In the intellect, it is expressed in the sin of pride, and in the will, there is the inclination to follow that which is pleasant at the moment rather than to obey the demands of reason.

32. According to the passage, in order for modern man to be guilty of original sin

    A. he must be corrupt in both mind and body.

    B. he must be guilty of intellectual and physical errors.

    C. Adam must be regarded as a unique human being.

    D. Adam must be regarded as the universal man.

    E. Adam must be regarded as responsible for Eve's fall.

33. Which of the following is a logical inference from this passage?

    A. The earlier in history a man is born, the more sinful he is likely to be.

    B. The later in history a man is born, the more sinful he is likely to be.

    C. Augustine would not agree with the phrase "as innocent as a newborn child."

    D. Augustine would agree that animals inherit original sin from Adam.

    E. At birth, a female is less guilty of sin than a male.

34. Which of the following would Augustine be most likely to regard as a consequence of the infected will?

    A. pride in one's ancestry

    B. envy of another's wisdom

    C. overeating

    D. vanity about one's appearance

    E. temper tantrums

35. According to the passage, the Greek idea of man differs from Augustine's because it believed that

    A. man is incapable of performing good deeds.

    B. man possesses an evil body but a good mind.

    C. corruption proceeds from the infected will.

    D. man possesses a good body and a good mind.

    E. man is incapable of following the dictates of reason.

Questions 36–39

Laboratory evidence indicates that life originated through chemical reactions in the primordial mixture (water, hydrogen, ammonia, and hydrogen cyanide) that blanketed the earth at its formation. These reactions were brought about by the heat, pressure, and radiation conditions then prevailing. One suggestion is that nu-
(5) cleosides and amino acids were formed from the primordial mixture, and the nucleosides produced nucleotides that produced the nucleic acids (DNA, the common denominator of all living things, and RNA). The amino acids became polymerized (chemically joined) into proteins, including enzymes, and lipids were formed from fatty acids and glycerol-like molecules. The final step appears to
(10) have been the gradual accumulation of DNA, RNA, proteins, lipids, and enzymes into a vital mass that began to grow, divide, and multiply.

The evolution of the various forms of life from this biochemical mass must not be considered a linear progression. Rather, the fossil record suggests an analogy between evolution and a bush whose branches go every which way. Like branches,
(15) some evolutionary lines simply end, and others branch again. Many biologists believe the pattern to have been as follows: bacteria emerged first and from them branched viruses, red algae, blue-green algae, and green flagellates. From the latter branched green algae, from which higher plants evolved, and colorless rhizoflagellates, from which diatoms, molds, sponges, and protozoa evolved. From
(20) ciliated protozoa (ciliophora) evolved multinucleate (syncytial) flatworms. These branched into five lines, one of which leads to the echinoderms and chordates. The remaining lines lead to most of the other phyla of the animal kingdom.

36. From the language of the first paragraph, you can assume that

    I. some scientists do not accept the theories of the origin of life the passage presents.

    II. the reactions that produced life required a unique combination of heat, pressure, and radiation.

    III. some living forms are without DNA.

    A. I only

    B. I and II only

    C. I and III only

    D. II and III only

    E. I, II, and III

37. Which of the following best expresses the analogy between evolution and a bush?

    A. species : evolution :: bush : branching

    B. species : branching :: bush : evolution

    C. evolution : species :: bush : branched viruses

    D. evolution : species :: bush : branches

    E. evolution : species :: branches : bush

38. Which of the following can you infer to be the least highly evolved?

    A. green algae

    B. blue-green algae

    C. molds

    D. flatworms

    E. ciliated protozoa

39. According to the passage, the evolutionary line of sponges in its proper order is

    A. bacteria-viruses-green algae-sponges.

    B. bacteria-viruses-rhizoflagellates-sponges.

    C. bacteria-red algae-blue-green algae-rhizoflagellates-sponges.

    D. bacteria-blue-green algae-green flagellates-rhizoflagellates-sponges.

    E. bacteria-green flagellates-rhizoflagellates-sponges.

Answers and Explanations for the Practice Reading Comprehension Questions

1. **C.** Although the author does not express violent anger, the characterization of the treatment of the Indians as a *tragedy* and the pronouncement that the whites' behavior was *barbaric* certainly express strong disapproval.

2. **B.** Although justice was on the Indians' side (second paragraph), *the Indians were not equal to the firepower of the United States Army*. Each of the other choices contradicts information in the passage.

3. **C.** This is evidence that the whites killed buffalo for sport rather than for subsistence. The disappearance of the buffalo herd is not, of itself, evidence that the buffalo did not provide subsistence to the whites.

4. **D.** The point of comparison is that the Atlantic coast Indians were not fierce warriors like the plains Indians. Thus they did not pose any kind of violent threat.

5. **B.** Three of the four paragraphs of the passage are devoted to discussing the abuse of the plains Indians. The "weight" the author gives to this topic suggests its significance.

6. **A.** The author states that the government itself *tried to be fair* but that the *agents'* indifference or corruption failed the American Indians.

7. **C.** According to the final paragraph of the passage, *the Indian agents were either too indifferent or corrupt to carry out the government's promises conscientiously. The army frequently ignored the Indian Bureau and failed to coordinate its policies with the civilians who were nominally in charge of Indian affairs.* Choices **B** and **D** may be historically correct but cannot specifically be inferred from the passage.

8. **A.** Though the passage criticizes the railroads, it does not present them as overt enemies of the Indians, but the last paragraph cites the agents, the army, and the settlers.

9. **B.** The passage summarizes findings about the effects of several kinds of unclean air on the human lungs throughout a lifetime. No mention is made of the earlier theories, and insofar as the passage makes a recommendation for health improvement, it does so obliquely.

10. **C.** The passage places the beginning of the decrease in lung size at age 20. Exposure to unclean air at any age decreases lung capacity.

11. **D.** The passage describes the victims of air pollution as unaware of the damage they have suffered. It is reasonable to infer that they would be more active if they were more conscious of their loss.

12. **E.** Both the damage from ozone and industrial pollutants and the reduction in oxygen supply are specific details in the passage. Eastern Europe is not mentioned.

13. **C.** The discussion shows how perception by sight is determined by the availability of light and looks ahead to the conclusion that the imagination can work in darkness.

14. **C.** This answer might be arrived at by considering that the "hats" example is reasonable, relevant, pointed, and simply written; therefore, all choices except **C** are eliminated. But it may also be argued that the example does not describe a "real" situation.

15. **B.** This is the passage's final point, that one can think *yellow feather in blue hat* without seeing or having seen the items together.

16. **D.** The passage is most clearly relevant to linguistics (the science of language) and to psychology (the science dealing with the mind and mental processes).

17. **D.** Choices **A**, **B**, and **E** do not apply to science fiction as opposed to other fiction genres. Choice **C** may or may not be true. Because science fiction is concerned with the *relation between man and his technology,* it follows that as technology becomes more important, the fiction of technology would become more popular.

18. **D.** Paragraph 2 defines science fiction as postulating a change from known to unknown conditions.

19. **D.** The sentence beginning at line 20 explains why science fiction is called a subgenre of fiction.

20. **C.** Though short stories are a possible source, it is more probable that the longer novel is the source of science fiction films. The passage alludes to the scarcity of science fiction works in poetry or drama.

21. **C.** The first paragraph says science fiction is not *a major literary genre* but *well worth reading and studying.*

22. **A.** The theme is the controlling idea or meaning of a work of literature.

23. **E.** The final sentence presents a general comparison between *any other story or novel* and science fiction, emphasizing their similarities and thus suggesting that the subgenre of science fiction should be read as one reads fiction in general.

24. **C.** The first paragraph leads up to the central question—*What is science fiction?* All of the passage is an attempt to answer that question. Choices **A** and **D** are too specific; **B** is too general; and **E** does not fit the tone of the passage.

25. **C.** Early in the passage you are told that in a semantic pair *the one* (term) *has no meaning without the other. You may define each by antonym with the other.* In short, semantic pairs are pairs of direct opposites. Only **C** is not such a pair.

26. **B.** The first paragraph says *subjects perceive or conceive objects in the process of knowing.* The pair that may best be substituted in that is *knower* and *known.*

27. **C.** The passage uses *Drink to me only with thine eyes* to show that the poet is fundamentally concerned with sensations and emotions. The quotation is an example of the subjective. In fact, the author finishes the paragraph by saying *This is to be subjective.*

28. **A.** Because the passage begins with the idea that the artist is subjective and the scientist objective, and the second paragraph deals with the subjectivity of the artist, you expect the third paragraph to be about the objectivity of the scientist.

29. **A.** The author tells us that scientists, whom he defines as *objective,* are *primarily concerned with the identity and continuity of the external object that stimulates* (their) *response.* That is, to be objective one must believe that the world is a collection of stable objects, each of which always looks the same. **E** is a single example consistent with this assumption but is not itself broad enough to support the question of objectivity in general. **D** is also too broad to be the best answer. **C** is not an assumption allowed by the passage.

30. **C.** The author concludes by saying that *it is impossible even for the scientist to escape the essential subjectivity of his sensations, generalizations, and deductions.* Because everything is subjective and different people each see the same thing a bit differently, one is seeming to devalue this case by saying that *what you say you see is just in your head. In your head* is not an unimportant place; according to the passage, it is the only place.

31. **E.** The third paragraph defines an *object* as the *external cause of a thing—a hypothesis,* with its singularity or plurality indeterminable. This is a definition peculiar to this passage.

32. **D.** The first paragraph explains that a universal Adam would involve all of the particulars of his class in his actions.

33. **C.** According to Augustine, even a newborn would be guilty of the sin of Adam.

34. **C.** The sins of the will are those that are pleasant at the moment, such as eating. Sins of pride, envy, or wrath are sins of the intellect.

35. **B.** The second paragraph presents the notion of a good mind and evil body as Greek.

36. **B.** The terms *indicates* and *suggestion* imply that theories described are only theories and not universally accepted. The passage calls DNA *the common denominator of all living things.*

37. **D.** *Evolution* is to *species* in the same way as *bush* is to *branches.* Just as the branches of a bush reach out every which way in varying lengths, the results of evolution (forms of life, species) have devolved in irregular "branches." This is the main point of the second paragraph.

38. **B.** Blue-green algae are the second step, emerging from bacteria.

39. **E.** The passage presents sponges as evolving from rhizoflagellates, which came from green flagellates, which came from bacteria.

Team-LRN

Using the Following Word List

The following chart and list of words are designed to help you see the levels and scope of the words used on the GRE. *Do not memorize these words;* simply quickly review them by putting a check mark in the column to indicate that you are familiar with the word. You may wish to look up the meaning of an unfamiliar word, and/or list a possible antonym (or phrase) that gives the opposite meaning of the word. Although most of these words have appeared on past GREs, that does not mean they will appear on future GREs. A quick review of these words will at least give you a familiarity with the levels of some of the words that have appeared in the past.

Sample Word List

abjure	aseptic	coda	diatribe
abridge	assuage	cogent	differential
abrogate	audacious	collusion	digress
abstract	audacity	complaisant	dilate
abundant	augment	confiscate	dilute
abut	authentic	confound	din
accelerate	autonomy	consequential	disabuse
accretion	auxiliary	console	disarm
aesthetic	aver	contaminate	discord
aggregate	avow	contemptible	dishonesty
alleviate	baleful	contentious	disingenuous
amalgamate	banal	contiguous	disinter
ambivalence	baseness	cower	disjoined
ameliorate	belie	cynic	dislodge
amplify	blandness	dearth	disparate
anarchy	bogus	debacle	disparity
anomalous	bolster	decipher	dispel
antagonistic	breach	dehydrate	dispute
antipathy	burgeon	demonstrative	dissect
apposite	cadge	denunciation	dissent
apprehensive	catharsis	depravity	dissident
approbation	chary	derivative	dissonance
ascribe	coalesced	derogatory	dissuade

distend	exculpate	impede	liaison
divert	extemporaneous	imperative	lucid
divest	extenuating	impermeable	lucidity
dominant	extirpation	impetuous	macerate
dormancy	extraneous	implausible	malevolent
ebullience	extroverted	implosion	manipulative
eccentric	fervid	impudent	meander
effrontery	fledge	impulsive	mediocre
egress	florid	inchoate	meticulous
eloquent	fluent	incursion	mollify
embellishment	foment	indigenous	molt
emissary	forbearing	indignity	monotonous
emulate	foresight	ineffectual	morbid
encapsulate	fortify	inept	mundane
enduring	fragile	infatuation	nadir
enervate	frugal	infiltration	nascent
engender	fulmination	ingrate	nonchalance
engrossing	garner	inimitable	nondescript
enticing	glib	insularity	noxious
entreat	global	intelligible	nucleate
enumerate	gossamer	intractable	nugatory
ephemeral	grievous	intrepid	obdurate
epigram	guileless	introspection	objectivity
epilogue	hackneyed	irksome	obviate
epistle	hapless	jabber	occult
epitome	harmony	jocular	odium
equity	hegemony	labile	ominous
eradicate	homogeneous	laconic	pacifist
eschew	humble	lambaste	paucity
espouse	hypocritical	lassitude	penchant
eulogy	iconoclast	legitimate	perennial
euphemism	immaterial	lethargic	perjury
exacerbate	impartial	levity	permeable

perseverance	prologue	sedulity	tranquillity
persevere	prone	sedulous	transpose
persistence	propagation	seminal	treacherous
pessimistic	puissance	serrated	turbulence
philistine	pungency	skeptical	turpitude
pied	purify	smother	tyro
pique	quell	snub	underling
placate	quiescence	somatic	undermine
plethora	quotidian	sophisticated	unfairness
ponderous	rarefy	soporific	unfaithfulness
porous	ratification	specious	unfeigned
pragmatic	rave	squalid	unpalatable
preamble	recalcitrance	stabilize	vacillate
precarious	recant	stagnation	vacuous
precipitate	recessive	stigma	vague
precursory	recondite	stymie	veracious
predilection	rectify	substantiation	verbose
preempt	redundancy	supplicate	verdant
preen	redundant	symmetry	verisimilar
presumptuous	reinforce	synthetic	vilify
pretension	relevant	taciturn	viscid
pristine	restored	tenacity	viscous
profligacy	revelation	tepid	vituperative
profuse	salubrious	terminate	voracious
prohibitive	savant	timorous	warmonger
proliferate	scrutinize	tortuous	welter
prolix	seamy	tranquil	zenith

INTRODUCTION TO QUANTITATIVE ABILITY

Prior to starting the exam, you will be carefully walked through a very basic tutorial program explaining how to use the computer for this exam. The computer-adaptive GRE gives you 45 minutes to answer 28 quantitative questions. These questions are composed of Quantitative Comparisons and Math Ability (Multiple-Choice) Questions, and the question types are intermingled. You will be given a medium difficulty question to start with, and then the computer will adapt the level of questions you receive based on your responses to all the previous questions. All of your work will be done on the scratch paper provided, and all of your answers will be recorded on the computer screen by using a mouse to fill in the appropriate ovals. You will not be allowed to go back to a previous question, so be sure to answer each question before you attempt to move to the next question.

The Quantitative Section will generate a score from 200 to 800. Your score will be based on how well you do on questions presented and also on the number of questions you answer. You should try to pace yourself so that you have sufficient time to consider every question. If possible, answer all 28 questions in this section. Guess if you need to.

In this book — to assist you in understanding explanations and to direct your attention to different questions and answer choices — each question is given a number, and letters have been placed inside the ovals of the answer choices. **Note that on the actual exam, questions will not have numbers next to them and there will be no letters in the ovals.**

Introduction to Quantitative Comparison

Quantitative Comparison questions require you to make a comparison between quantities in two columns. You are to decide if one column is greater, if the columns are equal, or if no comparison can be determined from the information given.

Ability Tested

Quantitative Comparison tests your ability to use mathematical insight, approximation, simple calculation, or common sense to quickly compare two given quantities.

Basic Skills Necessary

This question type requires twelfth-grade competence in school arithmetic, algebra, and intuitive geometry. Skills in approximating, comparing, and evaluating are also necessary. No advanced mathematics is necessary.

Directions

You are given two quantities, one in column A and one in column B. You are to compare the two quantities and choose oval:

A. if the quantity in Column A is greater;

B. if the quantity in Column B is greater;

C. if the two quantities are equal;

D. if the comparison cannot be determined from the information given.

Common Information: Information centered above columns refers to one or both columns. A symbol that appears in both columns represents the same thing in each column.

Analysis

- The purpose here is to make a comparison; therefore, exact answers are not always necessary. (Remember that you can tell whether you are taller than someone in many cases without knowing that person's height. Comparisons such as this can be made with only limited or partial information—just enough to compare.)

- Choice D—the comparison cannot be determined from the information given—is not a possible answer if there are values in each column, because you can always compare values.

- If you get different relationships, depending on the values you choose for variables, then the answer is always D. Notice that there are only four possible choices here.

- Note that you can add, subtract, multiply, and divide both columns by the same value, and the relationship between the columns will not change. Exception: You should not multiply or divide each column by negative numbers, because the relationship reverses. Squaring both columns is permissible, as long as each side is positive.

Suggested Approach with Sample Problems

This section emphasizes shortcuts, insight, and quick techniques. Long and/or involved mathematical computation is unnecessary and is contrary to the purpose of this section.

Samples

Column A	Column B
1. $21 \times 43 \times 56$	$44 \times 21 \times 57$

Canceling (or dividing) 21 from each side leaves

43×56	44×57

The rest of this problem should be done by inspection, because it is obvious that column B is greater than column A without doing any multiplication. You could have attained the correct answer by actually multiplying out each column, but you would then not have enough time to finish the section. The correct answer is B.

Column A	Column B
2. $\dfrac{3}{7} \times \dfrac{2}{5} \times \dfrac{5}{8}$	$\dfrac{2}{5} \times \dfrac{4}{11} \times \dfrac{5}{8}$

Because both sides have the factors $\frac{2}{5}$ and $\frac{5}{8}$, you may eliminate them from each column. Now compare $\frac{3}{7}$ and $\frac{4}{11}$ by cross-multiplying upward, and you get

$$\overset{\textcircled{33}}{}\ \overset{\textcircled{28}}{}$$
$$\frac{3}{7} \times \frac{4}{11}$$

Because 33 is greater than 28, $\frac{3}{7} > \frac{4}{11}$.

The correct answer is A.

Always keep the columns in perspective before starting any calculations. Take a good look at the value in each column before starting to work on one column.

Samples

Column A	Column B

3. 40% of 60   60% of 40

There is no need to do any calculations for this problem. Column A can be written $(^{40}/_{100}) \times 60$. Column B can be written $(^{60}/_{100}) \times 40$. You should note that both columns have $(40 \times 60)/100$.

The correct answer is C.

Column A	Column B

4. $\sqrt[3]{7^6}$ 2^8

After looking at each column (note that the answer could not be D because there are values in each column), compute the value on the left. Because you are taking a cube root, simply divide the power of 7 by 3 leaving 7^2, or 49. There is no need to take 2 out to the 8th power; just do as little as necessary:

$$2^2 = 4$$

$$2^3 = 8$$

$$2^4 = 16$$

$$2^5 = 32$$

STOP

It is evident that 2^8 is much greater than 49; the correct answer is B. *Approximating can also be valuable while remembering to keep the columns in perspective.*

> **As you keep the columns in perspective, check to see if the value in each column increases or decreases from the starting point.**

Sample

Column A	Column B

5. $(.9)^8$ $(1.01)^4$

In Column A, a fractional value (a value less than 1) is multiplied by itself many times. So its value becomes increasingly smaller. (For example, $\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$;

¼ × ½ = ⅛, and so forth). In Column B, a number greater than 1 is multiplied by itself; its value grows larger. So Column B is greater.

The correct answer is B.

> **As you keep the columns in perspective, notice if the signs (+, −) in each column are different. If they are, you don't need to work out the problem.**

Samples

Column A	Column B

6. $(-10)^{100}$ $(-10)^{101}$

A negative number multiplied an even number of times will yield a positive product. A negative number multiplied an odd number of times will yield a negative product. Since Column A will be positive and Column B will be negative, A is greater.

The correct answer is A.

Column A	Column B

7. $.05 - .125$ $.1$

Subtracting in Column A, you get $.05 - .125 = -.075$. Our difference is a negative number. Thus, the positive value in Column B must be greater.

The correct answer is B.

Column A	Column B

8. $x + y$ $a + b$
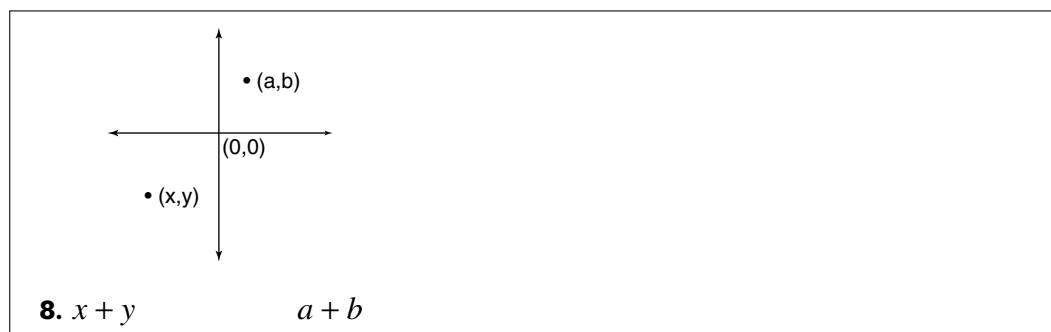
Because coordinates (x,y) are in quadrant III, they are both negative, so their sum is negative. Because coordinates (a, b) are in quadrant I, they are both positive, so their sum is positive. Therefore, Column B is greater than Column A.

The correct answer is B.

> **The use of partial comparisons can be valuable in giving you insight into finding a comparison. If you cannot simply make a complete comparison, look at each column part by part.**

Sample

Column A	Column B

9. $\dfrac{1}{57} - \dfrac{1}{65}$ $\dfrac{1}{58} - \dfrac{1}{63}$

Because finding a common denominator would be too time consuming, you should first compare the first fraction in each column (partial comparison). Notice that $\frac{1}{57}$ is greater than $\frac{1}{58}$. Now compare the second fractions and notice that $\frac{1}{65}$ is less than $\frac{1}{63}$. Using some common sense and insight, if you start with a larger number and subtract a smaller number, it must be greater than starting with a smaller number and subtracting a larger number, as pointed out below.
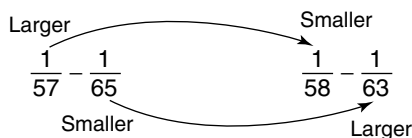
The correct answer is A.

> **Often, simplifying one or both columns can make an answer evident.**

Samples

Column A	Column B

10.   a, b, c, all greater than 0

    a(b + c)   ab + ac

Using the distributive property on Column A to simplify gives ab and ac; therefore, the columns are equal.

The correct answer is C.

Column A	Column B
11. a > 0	
b > 0	
c > 0	
(3a)(3b)(3c)	3abc

Multiplying column A gives (3a)(3b)(3c) = 27abc. Because a, b, and c are all positive values, 9abc will always be greater than 3abc.

The correct answer is A.

Column A	Column B
12. Number of prime numbers between 3 and 19	5

The prime numbers between 3 and 19 are 5, 7, 11, 13, and 17. The correct answer is C, since there are 5 primes.

If a problem involves variables (without an equation), substitute in the numbers 0, 1, and -1. Then try 1/2, and 2 if necessary. Using 0, 1, and -1 will often tip off the answer.

Samples

Column A	Column B
13. a + b	ab

Substituting 0 for a and 0 for b gives the following:

$$0 + 0 \qquad (0)$$

Therefore, $0 = 0$.

Using these values for a and b gives the answer C. But when you multiply two numbers, you don't always get the same result as when you add them, so try some other values. Substituting 1 for a and −1 for b gives the following:

$$1 + (-1) \qquad 1(-1)$$

Therefore, $0 > -1$

and the answer is now A.

Anytime you get more than one comparison (different relationships), depending on the values you choose, the correct answer must be D, the relationship cannot be determined. Notice that if you had substituted the values a = 4, b = 5; or a = 6, b = 7; or a = 7, b = 9; and so on, you would repeatedly get the answer B and may have chosen the incorrect answer.

The correct answer is D.

Column A   **Column B**

14.	$x < y < z$
$x + y + z$	xyz

Substituting 0 for x, 1 for y, and 2 for z, gives

$(0) + (1) + (2)$ $(0)(1)(2)$

Therefore, $3 > 0$.

Now substituting −1 for x, 0 for y, and 1 for z gives

$(−1) + (0) + (1)$ $(−1)(0)(1)$

Therefore, $0 = 0$.

Because different values give different comparisons, the correct answer is D.

Column A   **Column B**

15.	$x > y > 0$
	x and y are integers
$\dfrac{(x+y)^x}{x}$	$\dfrac{(x+y)^y}{y}$

Plug in values for *x* and *y* such that $x > y > 0$, and *x* and *y* are integers. For example, let $y = 1$ and $x = 2$. This gives

$$\dfrac{(2+1)^2}{2} \qquad \dfrac{(1+2)^1}{1}$$

$$\dfrac{(3)^2}{2} \qquad \dfrac{(3)^1}{1}$$

$$\dfrac{9}{2} \quad > \quad \dfrac{3}{1}$$

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Using these values, ⁹⁄₂, or 4½, is greater than 3, so Column A is greater. Using other values such that $x > y > 0$ will always give the same relationship. Column A is greater.

The correct answer is A.

Sometimes you can solve for a column directly, in one step, without solving and substituting. If you have to solve an equation or equations to give the columns values, take a second and see if there is a very simple way to get an answer before going through all of the steps.

Sample

Column A   **Column B**

16. $4x + 2 = 10$	
$2x + 1$	4

Hopefully, you would spot that the easiest way to solve for $2x + 1$ is directly by dividing $4x + 2 = 10$ by 2, leaving $2x + 1 = 5$. Therefore,

$5 > 4$

Solving for x first in the equation and then substituting would also have worked but would have been more time consuming. The correct answer is A.

Redrawing and marking diagrams and figures can be very helpful for giving insight into a problem. If you are given a diagram or figure on the screen, quickly redraw it on your scratch paper. Remember that diagrams and figures are meant for positional information only. Just because something "looks" a certain way is not enough reason to choose an answer.

Sample

Column A   Column B

XZ = YZ

17. x   y

Even though x appears larger, this is not enough. Mark in the diagram as shown.
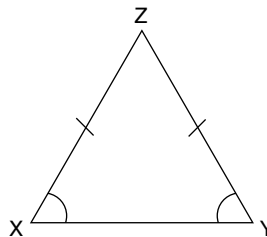
Notice that you should mark things of equal measure with the same markings, and since angles opposite equal sides in a triangle are equal, x = y. The correct answer is C.

> **If you are given a description of a diagram or a geometry problem without a diagram, you should make a sketch. When in doubt, "draw." This may tip off a simple solution.**

Sample

Column A   Column B

18. Perimeter of an equilateral triangle with side length $5x$	Perimeter of a square with side length of $4x$

Simply sketch and label each geometric figure as follows:

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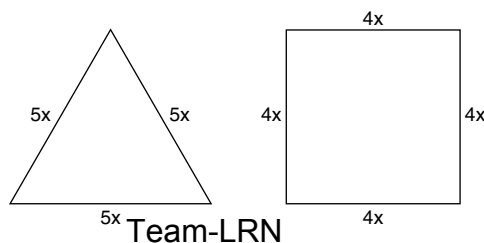
Now it is evident that the perimeter of an equilateral triangle with side $5x$ is

$$3(5x) = 15x$$

The perimeter of a square with side $4x$ is $4(4x) = 16x$.
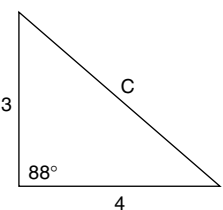
Since $4x$ and $5x$ represent lengths of sides, x must be a positive number. Therefore,

$$15x < 16x$$

The correct answer is B.

> **If you are given information that is unfamiliar to you and difficult to work with, change the number slightly (but remember what you've changed) to something easier to work with.**

Sample

Column A	Column B

19. 5   c

Becasue the 88° shown in the figure is unfamiliar to work with, change it to 90° for now so that you may use the Pythagorean theorem to solve for c.

$$a^2 + b^2 = c^2$$

Solve for c as follows:

$$(3)^2 + (4)^2 = c^2$$

$$9 + 16 = c^2$$

$$25 = c^2$$

Therefore, $5 = c$.

But because you used 90° instead of 88°, you should realize that the side opposite the 88° will be slightly smaller, or less than 5. The correct answer is then A, $5 > c$. (You may have noticed the 3:4:5 triangle relationship and not have needed the Pythagorean theorem.)

> **Check to see if you actually have enough information to make a comparison. Be aware of the information you are given and what you need.**

Samples

Column A	Column B

20.	Distance traveled by an airplane going 200 miles per hour	Distance traveled by an airplane going 190 miles per hour

Because no information is given for the amount of time each of the airplanes was traveling, no determination can be made about their distances traveled. You cannot assume that each airplane traveled the same amount of time. The correct answer is D.

Column A	Column B

21.	Volume of right circular cylinder with diameter of x	Volume of right circular cylinder with diameter of $x + 1$

The correct answer is D. Because the height of each right circular cylinder is necessary to obtain the volume, no comparison can be made.

> **On occasion, you will actually have to solve information centered between the columns or information in the columns. You should be able to work these quickly. *Remember, if it takes too long, you're probably doing it wrong.***

Samples

Column A	Column B

22.	The value of $5x - 9$ when $x = 6$	The value of $9 - 5x$ when $x = -6$

Quickly plug in the values given.

$5x - 9$		$9 - 5x$
$5(6) - 9$		$9 - 5(-6)$
$30 - 9$		$9 + 30$
21	$<$	39

Therefore, B is the correct answer.

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Column A **Column B**

> *m* and *n* are integers.
> $0 < m < n < 5$
>
> **23.** mn   m + n

After taking a careful look at the center information, you realize that you're limited in the numbers that you can use for *m* and *n*. Try some possibilities within these limitations.

Substituting 1 for *m* and 2 for *n* gives

   1(2)   1 + 2

   2   <   3

So when you use these numbers, Column B is greater.

Now try some other possible numbers. Substituting 3 for *m* and 4 for *n*, you get

   3(4)   3 + 4

   12   >   7

So when you use these numbers, Column A is greater.

The correct answer is D, no comparison can be determined.

Remember, anytime you get more than one comparison (different relationships) depending on the values you choose, the correct answer is D, the relationship cannot be determined.

Patterned Plan of Attack
Quantitative Comparison

Always read both columns of information before starting to work on either column.

↓

Remember: This section emphasizes speed and shortcuts. Don't get stuck doing long computations.

↓

Simplify the problem, or columns, if possible.

↓

Sketch, draw, redraw, and mark in diagrams and figures when appropriate.

↓

Check if you have enough information to make a comparison.

↓

Never choose (D) if there are values in each column.

↓

Always choose (D) if you get different comparisons, depending on the values you use.

↓

When substituting in numbers, ALWAYS start with 0, 1, and -1. Then try $1/2$, 2, and 10.

↓

When in doubt, plug in numbers.

Practice Quantitative Comparison Questions

Easy to Moderate

Column A	Column B
1. 4.78498	$4\frac{3}{4}$

2. $\frac{9}{11}$	$\frac{11}{13}$

3. $x > 0$

Column A	Column B
$x + \dfrac{x}{2}$	$x - \dfrac{x}{2}$

Questions 4–6 refer to the diagram.
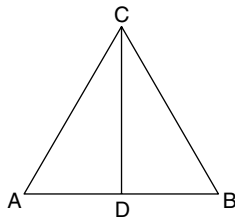
ΔABC is equilateral
CD is a median

Column A	Column B
4. $\angle ABC + \angle BAC$	$\angle CDB$
5. AD	DB
6. AB + BD	BC

$x + y = 0$

Column A	Column B
7. x	y

$p = \pm 3$

Column A	Column B
8. $(p + 2)^2$	26
9. 76.088	76.10
10. $\dfrac{1}{19} - 1$	$\dfrac{1}{18} - 1$

$\overline{AB} = \overline{BC}$

Column A	Column B
11. n	m
12. 5^3	2^7

$6x + 18y = 12$

Column A	Column B
13. x + 3y	2

$x + y = 4$

$xy = 0$
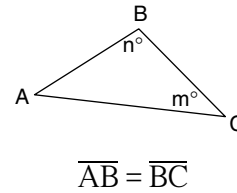
Column A	Column B
14. x	y

Questions 15–18 refer to the diagram
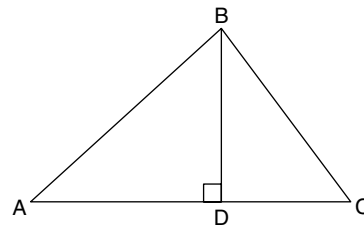
AD = BD = 6, $\angle$ADB = 90°

Column A	Column B
15. AB	BC
16. $\angle$BAD	$\angle$ABD
17. $\angle$DBC + $\angle$BCD	90°
18. AB + BC	AC
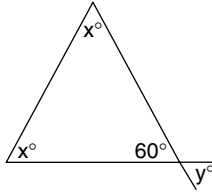
19. x   y

$$a = b$$

$$a < c$$

20. 2a   b + c

$$\frac{a}{6} = \frac{b}{4}$$

21. 2a   3b

Average

$$a > 0$$

22. 5ab   10ab

23. Area of circle with   Area of square
diameter 8   with side 7

Questions 24–25 refer to the diagram.
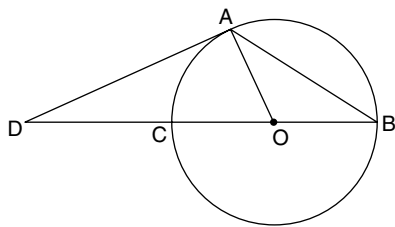
24. $\overset{\frown}{AC}$ $2(\angle B)$

25. $\angle AOB$ $\angle ADB$
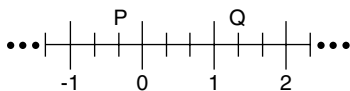
26. Value of point Q   Value of point
$2\frac{1}{3}$ away from
point P
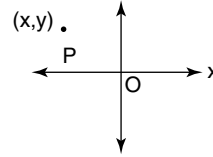
27. x   y

Circle O has radius 1 unit

28. Number of units   Number of units
in area of circle O   in circumference
of circle O
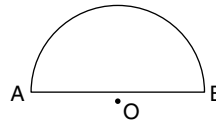
29. $\overline{AB}$ $\overset{\frown}{AB}$

2.2 pounds in 1 kilogram

30. Number of   Number of
kilograms in   pounds in 50
50 pounds   kilograms

$$T > x$$

$$y < m$$

$$x < y$$

31. x + y   T + m
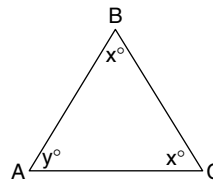
32. AB   BC

$$abc > 0$$

33. c(a + b)   abc

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$$0 < a < b < c < d$$

34. $\dfrac{c}{d}$ $\qquad\qquad\qquad\qquad$ $\dfrac{b}{a}$

35. $y^2 + 25$ $\qquad\qquad\qquad$ $(y - 5)(y - 5)$
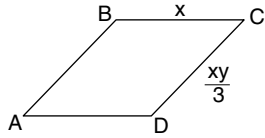
ABCD is a rhombus.

36. x $\qquad\qquad\qquad\qquad\qquad$ y

$$m^2 - 5m - 24 = 0$$

37. 10 $\qquad\qquad\qquad\qquad\qquad$ m

Above Average to Difficult

38. Number of degrees $\qquad$ 500°
in the interior angles
of a pentagon

$\overline{XY} = \overline{YZ}$
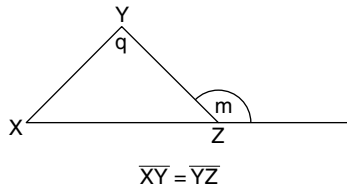
39. q $\qquad\qquad\qquad\qquad$ 2m − 180
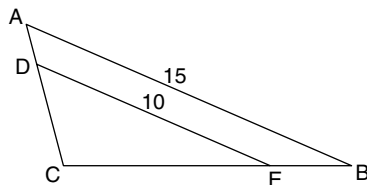
$\overline{AD} = 2 \qquad \overline{CE} = 8$
$\overline{DC} = x \qquad \overline{BE} = y$
$\overline{DE}$ is parallel to $\overline{AB}$

40. x $\qquad\qquad\qquad\qquad\qquad$ y

41. Circumference $\qquad$ Perimeter of
of circular region $\quad$ rectangular with
C diameter d $\qquad$ region R with
$\qquad\qquad\qquad\qquad$ length 2d and
$\qquad\qquad\qquad\qquad$ width d

30¢ per pound tea X and 40¢ per
pound tea Y were mixed to give
10 pounds of tea costing $3.60

42. Number of $\qquad\qquad$ Number of
pounds of tea X $\qquad$ pounds of tea Y
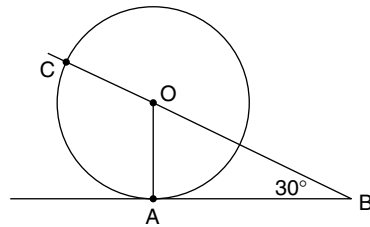
O is center of circle
AB is tangent to circle O

43. ½ $\overset{\frown}{AC}$ $\qquad\qquad\qquad$ ∠AOB

44. x $\qquad\qquad\qquad\qquad\qquad$ y

$\overline{AC} > \overline{BC} > \overline{AB}$
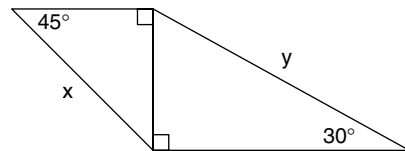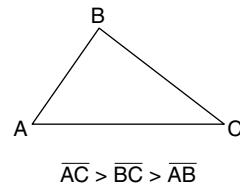
45. 60° $\qquad\qquad\qquad\qquad$ ∠ACB
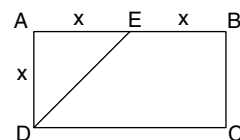
46. $\dfrac{\text{Area of DEBC}}{\text{Area of rectangle ABCD}}$ $\quad \dfrac{2}{3}$

y > 2x
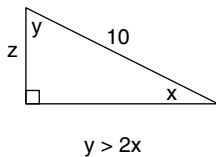
47. 5   z
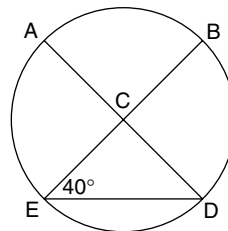
48. $\widehat{AB}$ $\widehat{AE}$

Answers and Explanations for Practice Quantitative Comparison Questions

Easy to Moderate

1. A. Because 4¾ is equivalent to 4.75, Column A is greater.

2. B. Converting each fraction to a decimal (dividing numerator by denominator) gives .82 for Column A and .84 for Column B. A faster way to compare two fractions is to cross-multiply up:

$$117 \quad\quad 121$$
$$\frac{9}{11} \diagdown \frac{11}{13}$$

The larger product (121) is above Column B, so Column B is greater.

3. A. First eliminate the equal values of x from each side, leaving (x/2) in Column A and −(x/2) in Column B. The information centered between the columns indicates that x is positive. Plugging in any positive value for x will result in Column A being positive and Column B being negative. So Column A is greater.

4. A. Since ΔABC is an equilateral triangle, ∠ABC and ∠BAC = 60°. So Column A = 120°.
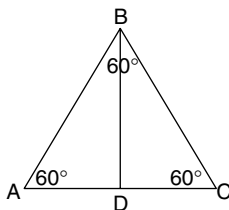
Looking at ΔCDB, ∠CDB must be less than 120° because ∠BCD already equals 60° and there is still another angle (CBD) in ΔCDB.

5. C. The definition of *median* is that it divides the side it intersects into two equal parts.

6. A. Since Δ ABC is equilateral, AB = BC. Thus AB + BD must be more than BC alone.

7. D. As the only condition for plugging in values for x and y is that together they must equal 0, the values for x and y may vary. For instance, both x and y may equal 0, in which case the answer would be C. Or x may be 1 and y may be –1, in which case Column A would be greater. Thus the answer is D.

8. B. Plugging in each value for p in column A, if p = +3, then $(3 + 2)^2 = (5)^2 = 25$. Plugging in –3 for p gives $(–3 + 2)^2 = (–1)^2 = 1$. In either case, Column B, 26, is greater.

9. B. The only difference in the two numbers occurs after the decimal points, where .10 (Column B) is greater than .088 (Column A).

10. B. In both columns, the same number, 1, is being subtracted. Therefore, the column that is greater can be determined simply by comparing the "starting" values. The column with the larger "starting" value (the number being subtracted from) will yield the larger remainder. Since $\frac{1}{18}$ is larger than $\frac{1}{19}$, Column B is greater. (That both remainders are negative does not affect the relationship.)

11. D. Since $\overline{AB} = \overline{BC}$, $\angle A = \angle C$. But no information is given for $\angle B$. So no relationship can be determined between *n* and *m*.
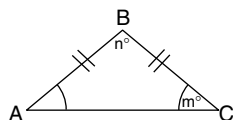
12. B. $5^3 = 5 \times 5 \times 5 = 125$, and $2^7 = 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 = 128$.

13. C. The information centered between the columns shows that 6x + 18y = 12. Notice that the quantity in Column A, x + 3y, exactly equals $\frac{1}{6}$ of 6x + 18y. Therefore, Column A equals $\frac{1}{6}$ of 12, or 2. Since Column B equals 2, the columns are equal.

14. D. For xy to equal 0, either x or y must be 0. If x = 0, then y = 4. But if y = 0, then x = 4. There is no way of knowing which is which.

15. D. The length of side AB is determinable by using the Pythagorean theorem, but since DC is not known, BC cannot be determined. Note that you cannot make a determination by measuring.
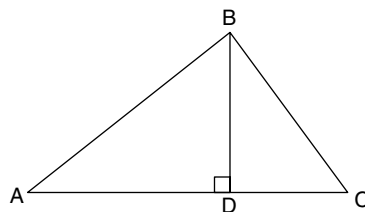
AD = BD = 6, ∠ADB = 90°

16. C. ∠BAD = ∠ABD, since angles across from equal sides in a triangle are equal.

17. C. Since there are 180° in a triangle and ∠BDC is 90°, the remaining two angles, ∠DBC and ∠BCD, must total 90°.

18. A. AB + BC is greater than AC, since the sum of any two sides of a triangle is greater than the third side.

19. C. In the triangle, one angle is 60°. Therefore, the remaining two angles must sum to 120° (since the total degree measure in any triangle is 180°). Since the two angles are each x, they then are equal, and each is 60°. y is the vertical angle of 60°. Since vertical angles are equal, y also equals 60°. So x = y.
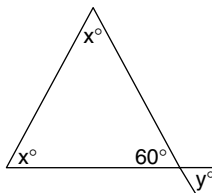
20. B. If a = b and a < c, then the following substitutions make the comparison simpler.

2a	b + c
a + a	b + c

Since a = b, then

a + b	b + c

Now canceling b's from each column leaves a < c.

21. C. To solve a/6 = b/4

cross-multiply, giving 4a = 6b

then divide by 2

leaving 2a = 3b

Average

22. D. The value for b could be 0, which would make Column A equal to Column B. Or b could be positive, which would make Column B greater than Column A. No relationship can be determined.

23. A. Area of circle with diameter 8 is computed by finding the radius, which is half the diameter, and substituting into this equation $A = \pi r^2$. Since the radius is 4, and π is about 3.14

$\pi(4)^2$	Area of square with side 7 is 49
3.14×16	50.24

Answers 24–25 refer to the diagram.

O is the center

Team-LRN
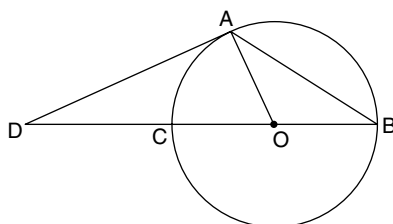
24. C. $\overset{\frown}{AC} = 2\,(\angle B)$, since an inscribed angle is half of the arc is *subtends* (connects to).

25. A. Since $\angle AOB$ is a central angle, it equals the measure of $\overset{\frown}{AB}$, and since $\angle ADC$ is outside the circle but also intersects the circle at $\overset{\frown}{AB}$, it is less than half of $\overset{\frown}{AB}$. Therefore

$\angle AOB > \angle ADC$

Alternate method: The external angle AOB must be larger than either of the remote interior angles.

26. D. The value of point Q is $1\frac{1}{3}$. But the value of the point $2\frac{1}{3}$ away from Q may be either $-2\frac{2}{3}$ or 2. So it could be either greater or less than Q. No relationship can be determined.
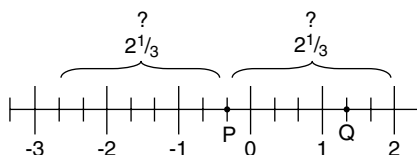
27. B. The coordinates of point P are (x, y.) Since the x coordinate is to the left of the origin, x is negative. The y coordinate is above the origin, so y is positive. Therefore, Column B is greater than Column A.

28. B. The area of a circle $= \pi r^2$. So Column A $= \pi(1^2) = \pi$. The circumference of a circle $= 2\pi r$. So Column B $= 2(\pi)1 = 2\pi$.

29. B. The shortest distance between two points is a straight line. Therefore, arc AB must be greater than line segment AB.
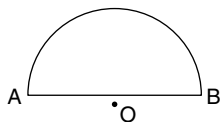
Point O is the center of a circle
which contains $\overset{\frown}{AB}$.
Point O does not lie on $\overline{AB}$

30. B. Column A $= 50 \div 2.2$, and Column B $= 50 \times 2.2$.

31. B. Since T is greater than x, and m is greater than y, then T + m must always be greater than x + y.

32. D. In a triangle, equal angles have equal opposite sides. Therefore, AB = AC. But no information is given about angle y, and so no relationship can be drawn regarding side BC.
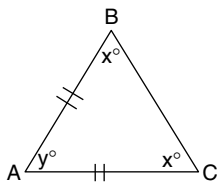
33. D. Since abc > 0, you could start by plugging in 1 for each of a, b, and c. So Column A will equal c(a + b) = 1(1 + 1) = 2; Column B will equal abc = (1)(1)(1) = 1. So Column A is greater. Now plug in a different set of numbers such that abc > 0, for example, 10 for each of a, b, and c. Now Column A will equal c(a + b) = 10(10 + 10) = 200; Column B equals abc = (10)(10)(10) = 1000. Now Column B is greater. Since we find two different relationships when we use different values, no definite relationship can be determined.

34. B. Because a, b, c, and d are each greater than 0, they are therefore positive. In Column A, the denominator is greater than the numerator, so the fraction equals less than 1. In Column B, the numerator is greater than the denominator, so the fraction equals more than 1. Therefore, Column B is greater.

35. D. If y is 0, columns A and B each equal 25, and so the columns could be equal. However, if y is 1, then Column A equals 26 and Column B equals 16. No definite relationship can be determined.

36. D. Since ABCD is rhombus, all sides are equal. Therefore, x = (xy)/3. Solving, first cross-multiply:

$3x = xy$

Canceling x's from each side: y = 3. However, knowing that y equals 3 tells nothing about the value of x.
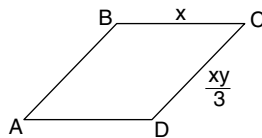
ABCD is a rhombus.

37. A. First factor:

$m^2 - 5m - 24 = 0$

$(m - 8)(m + 3) = 0$

Now set each equal to 0:

$m - 8 = 0$

$m = 8$

$m + 3 = 0$

$m = -3$

Since both 8 and −3 are less than 10, Column A is greater.

Above Average to Difficult

38. A. To find the number of degrees in the interior angles of a pentagon, use the formula $180 \times (n-2)$, where *n* is the number of sides. Therefore, $180 \times (5-2) = 180 \times 3 = 540$.
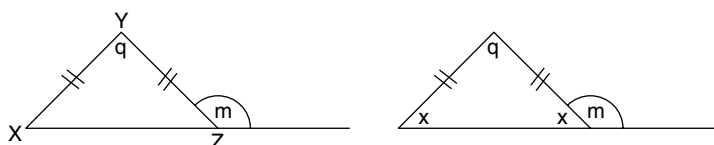
$540° > 500°$

Another method would be to draw the pentagon and break it into triangles connecting vertices (lines cannot cross), as shown below.
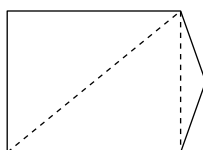
Multiplying the number of triangles (3) by 180 (degrees in a triangle) gives the same result, 540°.

39. C. Because $\overline{XY} = \overline{YZ}$, their opposite angles are equal. Let's call them each x:

Plugging in any value for x, say 40°, then

$\quad q = 100°$

$\quad m = 140°$

Therefore, Column A = 100° and Column B = 280° − 180° = 100°. The columns are equal.

40. C. Since $\overline{DE} \| \overline{AB}$, △DCE is similar to △ACB. Therefore, because $\overline{AB}$ is 50% greater than $\overline{DE}$, $\overline{CB}$ is 50% greater than $\overline{CE}$, y must equal 4. Similarly, $\overline{AC}$ is 50% greater than $\overline{DC}$, so $\overline{DC}$ must equal 4. So x = y.
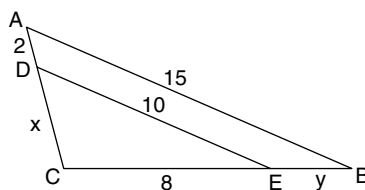
41. B. In Column A, the circumference of a circle $= \pi d$, or slightly greater than 3d (since $\pi \cong 3.14$). In Column B, the perimeter of rectangle =

$2l + 2w = 2(2d) + 2(d) = 6d$

So Column B is greater.

42. B. Since $3.60 is closer to $4.00, there must have been more 40¢ tea. Or let x equal the number of pounds of tea X, and $10 - x$ equal the number of pounds of tea Y. Then

$$30x + 40(10 - x) = 360$$
$$30x + 400 - 40x = 360$$
$$-10x = -40$$
$$x = 4$$

So there were 4 pounds of tea X and 6 pounds of tea Y.

43. C. Because AB is tangent to circle O, $\angle AOB = 90°$. Since the total interior degrees of any triangle is 180°, in triangle OAB, $\angle AOB$ must equal 60°. Since COB is a straight line, $\angle COA$ equals 120°. Since a central angle equals the amount of arc it intersects, $\overarc{AC}$ also equals 120°. So ½ $\overarc{AC} = 60°$, and the columns are equal.
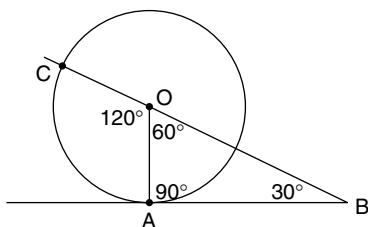
44. B. Assume that the side shared by each of the triangles equals 1. Therefore, the triangle on the left, a $45° - 45° - 90°$ triangle, has sides in the ratio of $1:1:1\sqrt{2}$. So $x = \sqrt{2}$. The triangle on the right is a $30°- 60°- 90°$ triangle, which has sides in the ratio of $1 - \sqrt{3} - 2$. Therefore, $y = 2$. Column B is greater than Column A.
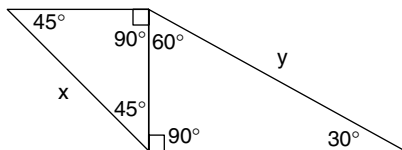

45. A. Because $\overline{AB}$ is the smallest side of the triangle, its opposite angle, $\angle ACB$, is the smallest angle. The smallest angle must be less than 60°, because if the smallest angle were equal to 60°, the three angles would sum to greater than 180°, which isn't possible. So Column A is greater.
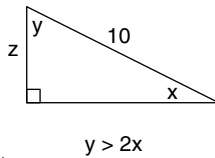
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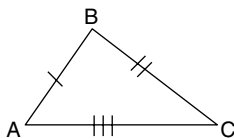
46. A. The area of DEBC is ¾ the area of ABCD, or:

$$\frac{\text{area DEBC}}{\text{area ABCD}} = \frac{3 \text{ units}}{4 \text{ units}} = \frac{3}{4}$$

Column A is greater.
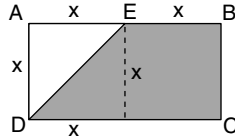
47. A. If angle y were equal to 2x, then in the triangle, y would be 60° and x would be 30°. In a 30°–60°–90° triangle, z would be half 10, or 5. However, since y is more than twice x, x cannot be 30°; it must be less than 30°. Therefore, side z must be less than half 10, or less than 5.

48. D. We have no way of knowing what the measures of the angles of the circle ∠ACB or ∠ACE) are. Thus we cannot know the values of $\overset{\frown}{AE}$ or $\overset{\frown}{AB}$
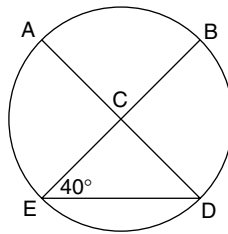
INTRODUCTION TO MATH ABILITY

Math Ability questions are multiple-choice math questions that give you five possible answer choices. You are required to select the best answer.

Ability Tested

Problem Solving questions test your ability to solve mathematical problems involving arithmetic, algebra, and geometry, as well as word problems, by using problem-solving insight, logic, and the application of basic skills.

Basic Skills Necessary

The basic skills necessary to do well on this section include high school arithmetic, algebra, and intuitive geometry—no formal trigonometry or calculus is necessary. These skills, along with logical insight into problem-solving situations, are covered by the examination.

Directions

Solve each problem in this section by using the information given and your own mathematical calculations. Select the correct answer of the five choices given. Use the scratch paper given for any necessary calculations.

Analysis

All scratchwork is to be done on the paper given at the test; get used to referring back to the screen as you do your calculations and drawings. You are looking for the *one* correct answer; therefore, although other answers may be close, there is never more than one right answer.

Suggested Approach with Samples

Always carefully focus on what you are looking for to ensure that you are answering the right question.

Samples

---

1. If $x + 6 = 9$, then $3x + 1 =$

    A. 3

    B. 9

    C. 10

    D. 34

    E. 46

You should first focus on $3x + 1$, because this is what you are solving for. Solving for x leaves $x = 3$, and then substituting into $3x + 1$ gives $3(3) + 1$, or 10. The most common mistake is to solve for x, which is 3, and *mistakenly choose* A as your answer. But remember, you are solving for $3x + 1$, not just x. You should also notice that most of the other choices would all be possible answers if you made common or simple mistakes. The correct answer is C. *Make sure that you're answering the right question.*

---

2. An employee's annual salary was increased $15,000. If her new annual salary now equals $90,000, what was the percent increase?

    A. 15%

    B. 16⅔%

    C. 20%

    D. 22%

    E. 24%

Focus on what you are looking for. In this case, *percent increase.*

Percent increase = change/starting point. If the employee's salary was increased $15,000 to $90,000, then the starting salary was $90,000 - 15,000 = 75,000$. Therefore,

percent increase $= 15,000/75,000 = 1/5 = 20\%$

The correct answer is C.

> **"Pulling" information out of the word problem structure can often give you a better look at what you are working with, and therefore, you gain additional insight into the problem. Organize this information on your scratch paper.**

Sample

> **3.** If a mixture is $\frac{3}{7}$ alcohol by volume and $\frac{4}{7}$ water by volume, what is the ratio of the volume of alcohol to the volume of water in this mixture?
>
> **A.** $\frac{3}{7}$
>
> **B.** $\frac{4}{7}$
>
> **C.** $\frac{3}{4}$
>
> **D.** $\frac{4}{3}$
>
> **E.** $\frac{7}{4}$

The first bit of information that you should pull out is what you are looking for: "ratio of the volume of alcohol to the volume of water." Rewrite the ration that you're looking for as *A:W* and then rewrite it into its working form: *A/W*. Next, pull out the volumes of each; A = $\frac{3}{7}$ and W= $\frac{4}{7}$. Now you can easily figure the answer by inspection or substitution: Using $\frac{3}{7}/\frac{4}{7}$, invert the bottom fraction and multiply to get $\frac{3}{7} \times \frac{7}{4} = \frac{3}{4}$. The ratio of the volume of alcohol to the volume of water is 3 to 4. The correct answer is C. When pulling out information, write out the numbers and/or letters on your scratch paper, putting them into some helpful form and eliminating some of the wording.

Sometimes combining terms, performing simple operations, or simplifying the problem in some other way will give you insight and make the problem easier to solve.

Sample

> **4.** Which of the following is equal to $\frac{1}{5}$ of 0.02 percent?
>
> **A.** 0.4
>
> **B.** 0.04
>
> **C.** 0.004
>
> **D.** 0.0004
>
> **E.** 0.00004

Simplifying this problem first means changing $\frac{1}{5}$ to .2. Next change 0.02 percent to 0.0002 (that is, .02 × .01 = 0.0002).

Now that you have simplified the problem, multiply .2 × 0.0002, which gives 0.00004. The correct answer is E. *Notice that simplifying can make a problem much easier to solve.*

> **If you immediately recognize the method or proper formula to solve the problem, go ahead and do the work. Work forward.**

Sample

> **5.** Which of the following numbers is between $\frac{1}{3}$ and $\frac{1}{4}$?
>
>   **A.** .45
>
>   **B.** .35
>
>   **C.** .29
>
>   **D.** .22
>
>   **E.** .20

Focus on "between $\frac{1}{3}$ and $\frac{1}{4}$." If you know that $\frac{1}{3}$ is .333 . . . and $\frac{1}{4}$ is .25, you have insight into the problem and should simply work it forward. Since .29 is the only number between .333 . . . and .25, the correct answer is C. *By the way, a quick peek at the answer choices would tip you off that you should work in decimals.*

> **If you don't immediately recognize a method or formula, or if using the method or formula would take a great deal of time, try working backward — from the answers. Because the answers are usually given in ascending or descending order, almost always start by plugging in choice C first. Then you'll know whether to go up or down with your next try. (Sometimes, you may want to plug in one of the simple answers first.)**

Samples

> **6.** If $\frac{x}{2} + \frac{3}{4} = 1\frac{1}{4}$, what is the value of x?
>
>   **A.** −2
>
>   **B.** −1
>
>   **C.** 0
>
>   **D.** 1
>
>   **E.** 2

You should first focus on "value of x." If you've forgotten how to solve this kind of equation, work backward by plugging in answers. Start with choice C; plug in 0.

$$\frac{0}{2} + \frac{3}{4} \neq 1\frac{1}{4}$$

Because this answer is too small, try choice D, a larger number. Plugging in 1 gives you

½ + ¾ = 1¼

²⁄₄ + ¾ = 1¼

⁵⁄₄ = 1¼

This answer is true, so D is the correct answer. *Working from the answers is a valuable technique.*

---

7. What is the greatest common factor of the numbers 18, 24, and 30?

   A. 2

   B. 3

   C. 4

   D. 6

   E. 12

The largest number that divides evenly into 18, 24, and 30 is 6. You could've worked from the answers, but here you should start with the largest answer choice, because you're looking for the *greatest* common factor.

The correct answer is D.

> **If you don't immediately recognize a method or formula to solve the problem, you may want to try a reasonable approach and then work from the answer choices. Try to be reasonable.**

Samples

---

8. Barney can mow the lawn in 5 hours, and Fred can mow the lawn in 4 hours. How long will it take them to mow the lawn together?

   A. 5 hours

   B. 4½ hours

   C. 4 hours

   D. 2²⁄₉ hours

   E. 1 hour

Suppose that you're unfamiliar with the type of equation for this problem. Try the "reasonable" method. Because Fred can mow the lawn in 4 hours by himself, he will take less than 4 hours if Barney helps him. Therefore, choices A, B, and C are not sensible. Taking this method a little farther, suppose that Barney could also mow the lawn in 4 hours. Therefore, together it would take Barney and Fred 2 hours. But, because Barney is a little slower than this, the total time should be more than 2 hours. The correct answer is D, 2 $\frac{2}{9}$ hours.

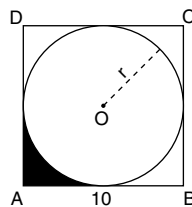Using the equation for this problem would give the following calculations:

$\frac{1}{5} + \frac{1}{4} = \frac{1}{x}$

In 1 hour, Barney could do $\frac{1}{5}$ of the job, and in 1 hour, Fred could do $\frac{1}{4}$ of the job; unknown $\frac{1}{x}$ is the part of the job they could do together in 1 hour. Now, solving, you calculate as follows:

$\frac{4}{20} + \frac{5}{20} = \frac{1}{x}$

$\frac{9}{20} = \frac{1}{x}$

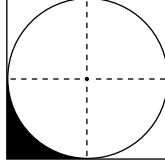Cross multiplying gives $9x = 20$; therefore, $x = \frac{20}{9}$, or $2 \frac{2}{9}$.

9. Circle O is inscribed in square ABCD as shown above. The area of the shaded region is approximately

    A. 10

    B. 25

    C. 30

    D. 50

    E. 75

Using a reasonable approach, you would first find the area of the square: $10 \times 10 = 100$. Then divide the square into four equal sections as follows:

Because a quarter of the square is 25, the shaded region must be much less than 25. The only possible answer is choice A (10). Another approach to this problem is to first find the area of the square: $10 \times 10 = 100$. Then subtract the approximate area of the circle: $A = \pi(r^2) \cong 3(5^2) = 3(25) = 75$. Therefore, the total area inside the square, but outside the circle, is approximately 25. One quarter of that area is shaded. Therefore, $25/4$ is approximately the shaded area. The closest answer is A (10).

Substituting numbers for variables can often be an aid to understanding a problem. Remember to substitute simple numbers, because you have to do the work.

Sample

10. If $x > 1$, which of the following decreases as x decreases?

   I. $x + x^2$

   II. $2x^2 - x$

   III. $\dfrac{1}{x + 1}$

   A. I only

   B. II only

   C. III only

   D. I and II only

   E. II and III only

This problem is most easily solved by taking each situation and substituting simple numbers.

However, in the first situation, I, $x + x^2$, recognize that this expression will decrease as x decreases.

Trying $x = 2$ gives $2 + (2)^2$, which equals 6.

Now trying $x = 3$ gives $3 + (3)^2 = 12$.

Notice that choices B, C, and E are already eliminated because they don't contain I. You should also realize that you now need to try only the values in II; because III is not paired with I as a possible choice, III cannot be one of the answers.

Trying x = 2 in the expression $2x^2 - x$ gives $2(2)^2 - 2$, or $2(4) - 2$, which leaves 6.

Now trying x = 3 gives $2(3)^2 - 3$, or $2(9) - 3 = 18 - 3 = 15$. This expression also decreases as x decreases. Therefore, the correct answer is choice D. Notice again that III wasn't attempted because it wasn't one of the possible choices.

Some problems may deal with percent or percent change. If you don't see a simple method for working the problem, try using values of 10 or 100 and see what you get.

Sample

11. A corporation triples its annual bonus to 50 of its employees. What percent of the employees' new bonus is the increase?

    A. 50%

    B. 66⅔%

    C. 100%

    D. 200%

    E. 300%

Use $100 for the normal bonus. If the annual bonus was normally $100, tripled it would be $300. Therefore, the increase ($200) is ⅔ of the new bonus ($300). Two-thirds is 66⅔%.
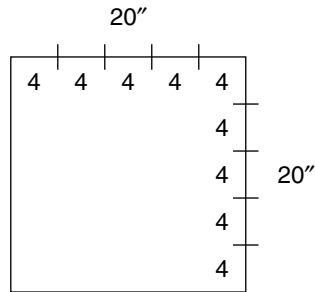
The correct answer is B.

Sketching diagrams or simple pictures can also be very helpful because the diagram may tip off either a simple solution or a method for solving the problem.

Samples

12. What is the maximum number of pieces of birthday cake of size 4" by 4" that can be cut from a cake 20" by 20"?

    A. 5

    B. 10

    C. 16

    D. 20

    E. 25

Sketching the cake and marking in as the following figure shows makes this a fairly simple problem.


Notice that five pieces of cake will fit along each side; therefore, $5 \times 5 = 25$. The correct answer is E. Finding the total area of the cake and dividing it by the area of one of the 4×4 pieces would also give you the correct answer, but beware of this method because it may not work if the pieces don't fit evenly into the original area.

---

13. If P lies on $\overarc{ON}$ such that $\overarc{OP} = 2\overarc{PN}$ and Q lies on $\overarc{OP}$ such that $\overarc{OQ} = \overarc{QP}$, what is the relationship of $\overarc{OQ}$ to $\overarc{PN}$?

   A. ⅓

   B. ½

   C. 1

   D.. ²⁄₁

   E. ³⁄₁

A sketch would look like this:
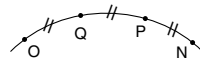
It is evident that $\overarc{OQ} = \overarc{PN}$, so the ratio is 1/1, or 1. Or, you could assign values $\overarc{ON}$ such that $\overarc{OP} = 2\overarc{PN}$: $\overarc{OP}$ equals 2, and $\overarc{PN}$ equals 1. If Q lies on $\overarc{OP}$ such that $\overarc{OQ} = \overarc{QP}$, then $\overarc{OP}$ (2) is divided in half. So $\overarc{OQ} = 1$, and $\overarc{QP} = 1$. Therefore, the relationship of $\overarc{OQ}$ to $\overarc{PN}$ is 1 to 1. The correct answer is C.

> **Redrawing and marking in diagrams on your scratch paper as you read them can save you valuable time. Marking can also give you insight into how to solve a problem because you will have the complete picture clearly in front of you.**
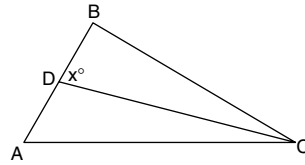
14. In the triangle, $\overline{CD}$ is an angle bisector, angle *ACD* is 30°, and angle *ABC* is a right angle. What is the measurement of angle *x* in degrees?

    A. 80°

    B. 75°

    C. 60°

    D. 45°

    E. 30°

After redrawing the diagram on your scratch paper, read the problem and mark as follows:

In the triangle above, $\overline{CD}$ is an angle bisector (*stop and mark in the drawing*), angle *ACD* is 30° (*stop and mark in the drawing*), and angle *ABC* is a right angle (*stop and mark in the drawing*). What is the measurement of angle *x* in degrees? (*Stop and mark in or circle what you're looking for in the drawing.*)
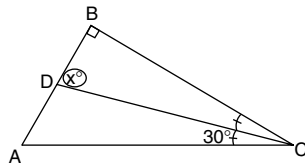
With the drawing marked in, it is evident that, because angle *ACD* is 30°, angle *BCD* is also 30° because they are formed by an *angle bisector* (divides an angle into two equal parts). Because angle *ABC* is 90° (right angle) and angle *BCD* is 30°, angle *x* is 60° because there are 180° in a triangle; 180 − (90 + 30) = 60. The correct answer is C. *After redrawing the diagrams on your scratch paper, always mark in the diagrams as you read their descriptions and information about them, including the information you're looking for.*
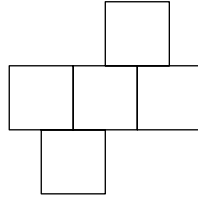
15. If each square in the figure above has a side of length 3, what is the perimeter?

    A. 12

    B. 14

    C. 21

    D. 30

    E. 36

Redraw and mark in the information given.
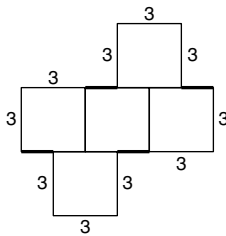
You now have a calculation for the perimeter: 30 *plus* the darkened parts. Now look carefully at the top two darkened parts. They will add up to 3. (Notice how the top square may slide over to illustrate that fact.)

The same is true for the bottom darkened parts. They will add up to 3.

Thus, the total perimeter is $30 + 6 = 36$, choice E.

> **If it appears that extensive calculations are going to be necessary to solve a problem, check to see how far apart the choices are, and then approximate. The reason for checking the answers first is to give you a guide for how freely you can approximate.**

Sample

---
16. The value for $(0.889 \times 55)/9.97$ to the nearest tenth is

    A.   0.5

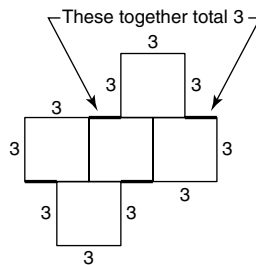   **B.**   4.63

    C.   4.9

    D.   7.7

    E.   49.1

Before starting any computations, take a glance at the answers to see how far apart they are. Notice that the only close answers are choices B and C, but B is not possible because it's to the nearest hundredth, not tenth. Now, making some quick approximations, $0.889 \cong 1$ and $9.97 \cong 10$, leaves the problem in this form

$$\frac{1 \times 55}{10} = \frac{55}{10} = 5.5$$

The closest answer is C; therefore, it is the correct answer. Notice that choices A and E aren't reasonable.

> **Some problems may not ask you to solve for a numerical answer or even an answer including variables. Rather, you may be asked to set up the equation or expression without doing any solving. A quick glance at the answer choices will help you know what is expected.**

Sample

---
17. Rick is three times as old as Maria, and Maria is four years older than Leah. If Leah is z years old, what is Rick's age in terms of z?

    A. $3z + 4$

    B. $3z - 12$

    C. $3z + 12$

    D. $(z + 4)/3$

    E. $(z - 4)/3$

Team-LRN

The correct answer is C. Because

$$z = \text{Leah's age}$$

$$z + 4 = \text{Maria's age}$$

$$3(z + 4) = \text{Rick's age}$$

$$\text{or } 3z + 12 = \text{Rick's age}$$

In some problems, you may be given special symbols that you're unfamiliar with. Don't let these special symbols alarm you. They typically represent an operation or combination of operations that you're familiar with. Look for the definition of the special symbol or how it is used.

Sample

18. If $\odot$ is a binary operation such that $a \odot b$ is defined as $\dfrac{a^2 - b^2}{a^2 + b^2}$, then what is the value of $3 \odot 2$?

    A. $-5/13$

    B. $1/13$

    C. $1/5$

    D. $5/13$

    E. 1

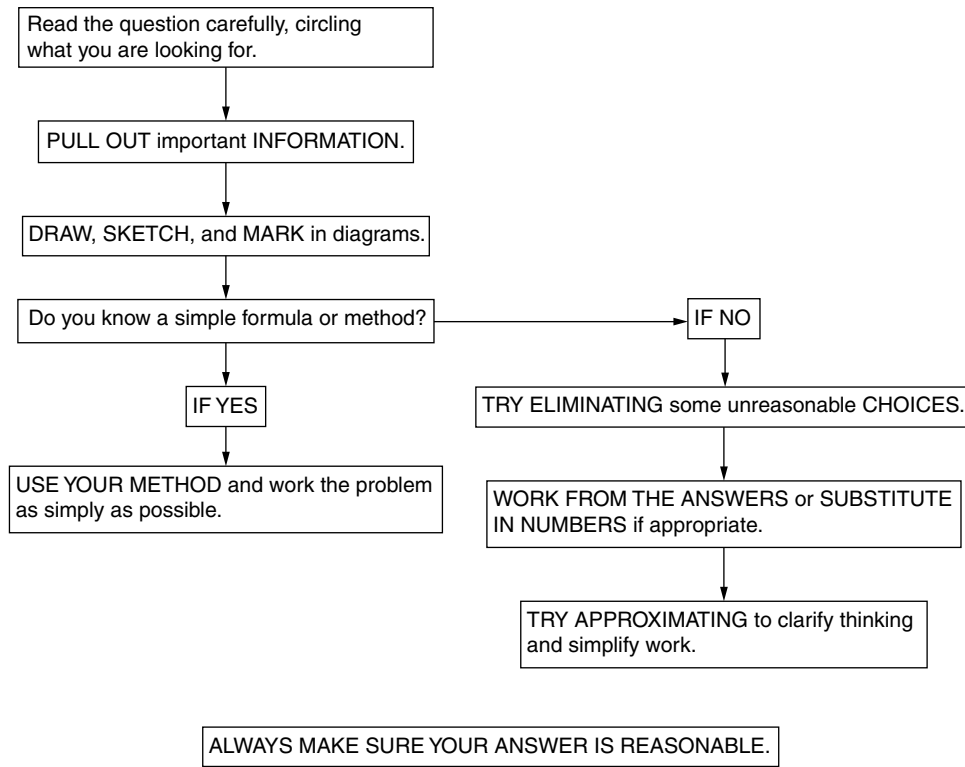The correct answer is D. The value of a $a \odot b =$

$$\frac{a^2 - b^2}{a^2 + b^2}$$

Simply replacing a with 3 and b with 2 gives

$$\frac{3^2 - 2^2}{3^2 + 2^2} = \frac{9 - 4}{9 + 4} = \frac{5}{13}$$

The correct answer is D.
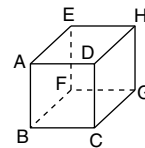
A PATTERNED PLAN OF ATTACK
Math Ability

```
┌─────────────────────────────────┐
│ Read the question carefully,    │
│ circling what you are looking   │
│ for.                            │
└─────────────────────────────────┘
                │
                ▼
┌─────────────────────────────────┐
│ PULL OUT important INFORMATION. │
└─────────────────────────────────┘
                │
                ▼
┌─────────────────────────────────┐
│ DRAW, SKETCH, and MARK in       │
│ diagrams.                       │
└─────────────────────────────────┘
                │
                ▼
┌──────────────────────────────────┐         ┌────────┐
│ Do you know a simple formula or  │────────▶│ IF NO  │
│ method?                          │         └────────┘
└──────────────────────────────────┘              │
                │                                  ▼
                ▼                       ┌─────────────────────────────────────┐
          ┌─────────┐                   │ TRY ELIMINATING some unreasonable   │
          │ IF YES  │                   │ CHOICES.                            │
          └─────────┘                   └─────────────────────────────────────┘
                │                                  │
                ▼                                  ▼
┌──────────────────────────────────┐   ┌─────────────────────────────────────┐
│ USE YOUR METHOD and work the     │   │ WORK FROM THE ANSWERS or SUBSTITUTE │
│ problem as simply as possible.   │   │ IN NUMBERS if appropriate.          │
└──────────────────────────────────┘   └─────────────────────────────────────┘
                                                   │
                                                   ▼
                                        ┌─────────────────────────────────────┐
                                        │ TRY APPROXIMATING to clarify        │
                                        │ thinking and simplify work.         │
                                        └─────────────────────────────────────┘
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┌───┐
│ ALWAYS MAKE SURE YOUR ANSWER IS REASONABLE. │
└───┘

Practice Math Ability Questions

Easy to Moderate

1. If $3x = -9$, then $3x^3 - 2x + 4 =$

   A. −83

   B. −71

   C. −47

   D. −17

   E. 61

2. In the series 8, 9, 12, 17, 24 . . . the next number would be

   A. 29

   B. 30

   C. 33

   D. 35

   E. 41

3. A third-grade class is composed of 16 girls and 12 boys. There are 2 teacher-aides in the class. The ratio of girls to boys to teacher-aides is

   A. 16:12:1

   B. 8:6:2

   C. 8:6:1

   D. 8:3:1

   E. 4:3:1

4. If $4a + 2 = 10$, then $8a + 4 =$

   A. 5

   B. 16

   C. 20

   D. 24

   E. 28

5. The closest approximation of $\dfrac{69.28 \times .004}{.03}$ is

   A. .092

   B. .92

   C. 9.2

   D. 92

   E. 920

Average

6. $\dfrac{\frac{7}{10} \times 14 \times 5 \times \frac{1}{28}}{\frac{10}{17} \times \frac{3}{5} \times \frac{1}{6} \times 17} =$

   A. $^4\!/_7$

   B. 1

   C. $^7\!/_4$

   D. 2

   E. $^{17}\!/_4$

7. In the figure above, AB is one edge of a cube. If AB equals 5, what is the surface area of the cube?

   A. 25

   B. 100

   C. 125

   D. 150
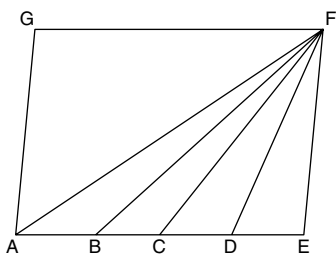
   E. 300

8. Which of the following is the largest?

  A. half of 30% of 280

  B. one-third of 70% of 160

  C. twice 50% of 30

  D. three times 40% of 40

  E. 60% of 60

9. If $n! = n \cdot (n-1) \cdot (n-2) \cdot (n-3) \ldots$ $2 \cdot 1$, what is the value of

$$\frac{(6!)(4!)}{(5!)(3!)}$$

  A. $\frac{5}{4}$

  B. $\frac{8}{5}$

  C. 10

  D. 24

  E. 1152

10. In the parallelogram, if $AB = BC = CD = DE$, what is the ratio of the area of triangle CDF to the area of triangle ABF?

  A. 1:4

  B. 1:1

  C. 2:1

  D. 4:1

  E. cannot be determined

11. The average of 9 numbers is 7, and the average of 7 other numbers is 9. What is the average of all 16 numbers?

  A. 8

  B. $7\frac{7}{8}$

  C. $7\frac{1}{2}$

  D. $7\frac{1}{4}$

  E. $7\frac{1}{8}$

12. The figure above consists of 9 small squares and is called a "magic square" because the total of the numbers added horizontally, vertically, or diagonally are all equal. If the total of the two diagonal rows are subtracted from the total of the three horizontal rows, the result obtained will equal

  A. two-thirds a diagonal row

  B. three-halves a diagonal row

  C. any vertical row

  D. double a horizontal row

  E. one-half a horizontal row

13. Jane is six years older than Tom, and Tom is five years younger than Phillip. Chris is three years older than Tom. If Jane's age is expressed as J, what is the sum of the ages of Jane, Tom, Phillip, and Chris in terms of J?

  A. $4J - 10$

  B. $J - 9$

  C. $3J - 6$
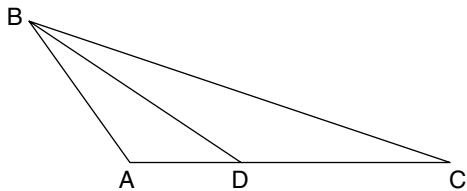
  D. $4J + 12$

  E. $J + 14$

14. If $6x - 3y = 30$ and $4x = 2 - y$, what is the value of $x + y$?

A. 2

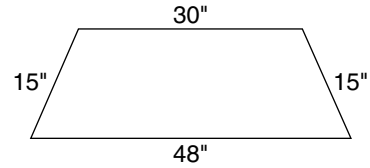B. −4

C. −6

D. −8

E. −10
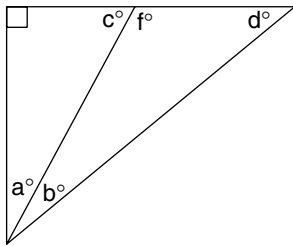
15. In the right triangle, $c = 2a$ and $d > 2b$; therefore, which of the following must be true?

A. $c > b + d$

B. angle a is greater than angle b

C. angle a equals angle b

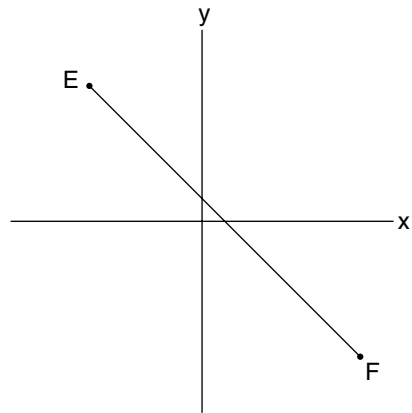D. angle b is greater than angle a

E. angle d equals twice angle a

16. In the figure, $AB = AD$ and $BD = CD$. If $\angle C$ measures 19°, what is the measure of $\angle A$ in degrees?

A. 75

B. 94

C. 104

D. 142

E. cannot be determined

17. What is the area of the given trapezoid, in square inches?

A. 585

B. 468

C. 234

D. 108

E. cannot be determined

18. If point E has coordinates (−3,5) and point F has coordinates (6,−7), then the length of EF =

A. 21

B. 15

C. 7

D. 5

E. 3

19. If $ab \neq 0$, then $\dfrac{a + 8b}{8a} - \dfrac{a + 2b}{2a} =$

   A. $-\dfrac{3}{8}$

   B. $\dfrac{-3a + 16b}{8a}$

   C. 0

   D. $\dfrac{3a + 6b}{8a}$

   E. $\dfrac{10b}{8a}$

20. What is the area of a square in square inches if its perimeter is 10 feet?

   A. 6.25

   B. 25

   C. 60

   D. 600

   E. 900

21. If x and y are integers such that $2 < y < 25$ and $5 < x < 13$, then the largest possible value of $(y/x) + (x/y) =$

   A. ½

   B. 4

   C. 4¼

   D. 8

   E. 10

22. Mary will be y years old x years from now. How old will she be z years from now?

   A. $y - x + z$

   B. $y + x + z$

   C. $y + x - z$

   D. $y - x - z$

   E. $x + z - y$

Above Average to Difficult

23. If m and n are integers and $\sqrt{mn} = 10$, which of the following CANNOT be a value of m + n?

   A. 25

   **B.** 29

   C. 50

   D. 52

   E. 101
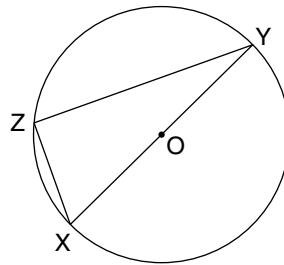
24. In circle O, OX = 8.5 and YZ = 15. What is the area of $\triangle$XYZ in square units?

   A. 127.5

   B. 120

   C. 60

   D. 40

   E. 30

25. If x, y, and z are consecutive negative integers, not necessarily in that order, which of the following may be true?

   A. $x + y > z$

   B. $xy < z$

   C. $z + y = y + x$

   D. $2x = (yz)/2$

   E. $x + y = z$

26. How many pounds of tea worth 93¢ per pound must be mixed with tea worth 75¢ per pound to produce 10 pounds worth 85¢ per pound?

   A. 2²⁄₉

   B. 3½

   C. 4⁴⁄₉

   D. 5⁵⁄₉

   E. 9½

27. If x, y, and z are consecutive positive integers greater than 1, not necessarily in that order, then which of the following is (are) true?

   I. x > z

   II. x + y > z

   III. yz > xz

   IV. xy > y + z

   A. I only

   B. II only

   C. II and III only

   D. III and IV only

   E. II and IV only

28. Rhombus ABCD has a perimeter of 8, and diagonal AC equals 2. What is the area of ABCD?

   A. $\sqrt{3}$

   B. 2

   C. $2\sqrt{2}$

   D. $2\sqrt{3}$

   E. 4

29. If m is an integer such that $-5 < m < 2$, and n is an integer such that $-4 < n < 5$, what is the least possible value for $3m^2 - 2n$?

   A. −85

   B. −75

   C. −10

   D. −8

   E. 0

30. If # is a binary operation such that a#b is defined as $\dfrac{a^2 + b^2}{a^2 - b^2}$ and $(a^2 - b^2 \neq 0)$, then what is the value of a#b if $2a = b$ and $a \neq 0$?

   A. 1⅓

   B. ⅗

   C. −½

   D. −⅗

   E. −1⅔

31. The product of x and y is a constant. If the value of x is increased by 50%, by what percentage must the value of y be decreased?

   A. 50%

   B. 40%

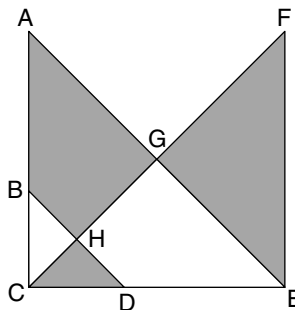   **C.** 33⅓

   D. 25%

   E. 20%

32. If x + y forms an integer z that is greater than 0 and not divisible by 3, and if x is an even integer, which of the following CANNOT be values of y?

I. $\dfrac{2z}{3}$

II. $2z + 1$

III. $\dfrac{z}{2}$

A. I only

B. II only

C. III only
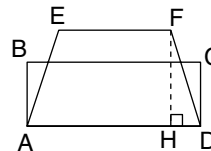
D. I and II only

E. II and III only
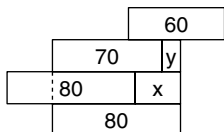
33. The horizontal length of each rectangle is marked within. What is the total horizontal length of x + y?

A. 40

B. 50

C. 80

D. 90

E. cannot be determined

34. In the figure above, $AE\|BD, AC\|FE, AC \perp CE$, and $BD \perp CF$. H is the midpoint of BD. What is the ratio of the shaded area to the unshaded area?

A. 1/2

B. 2/3

C. 4/3

D. 3/2

E. 2/1

35. Rectangle ABCD and trapezoid AEFD have equal areas. If the ratio of $\overline{CD}$ to $\overline{FH}$ is 3 to 4, what is the ratio of $\overline{EF}$ to $\overline{AD}$?

A. 1 to 2

B. 2 to 3

C. 3 to 4

D. 4 to 3

E. 3 to 2

36. Tom is filling a bathtub with hot and cold water. Running by itself, the hot water would exactly fill the tub in 40 minutes. The cold water running by itself would exactly fill the tub in 20 minutes. With the plug out, it takes 30 minutes to empty a full tub. Tom accidentally leaves the plug out of the tub. When Tom checks on the tub 30 minutes after turning on the hot and cold water, he finds the tub

    A. empty

    B. one-third full

    C. one-half full

    D. two-thirds full

    E. overflowing

Answers and Explanations for Practice Math Ability Questions

Easy to Moderate

  1. **B.** First solving $3x = -9$, $x = -3$. Now plug into $3x^3 - 2x + 4$:

     $3x^3 - 2x + 4 =$

     $3(-3)^3 - 2(-3) + 4 =$

     $3(-27) + 6 + 4 =$

     $-81 + 6 + 4 = -71$

  2. **C.** In the series, 8, 9, 12, 17, 24 . . .

     $9 - 8 = 1$ $17 - 12 = 5$

     $12 - 9 = 3$ $24 - 17 = 7$

     Hence, the difference between the next term and 24 must be 9 or

     $x - 24 = 9$

     and $x = 33$

     Hence, the next term in the series must be 33.

3. C. Girls to boys to teacher-aides are in proportion 16 to 12 to 2. Reduced to lowest terms, 16:12:2 equals 8:6:1.

4. C. One may answer this question by solving

$$4a + 2 = 10$$
$$4a = 8$$
$$a = 2$$

Now, plugging in 2 for a:

$$8a + 4 =$$
$$8(2) + 4 = 20$$

A faster way of solving this is to see the relationship between the quantity $4a + 2$ (which equals 10) and $8a + 4$. Since $8a + 4$ is twice $4a + 2$, the answer must be twice 10, or 20.

5. C. This problem is most easily completed by rearranging and approximating as follows:

$$\frac{69.28 \times .004}{.03} \cong 69 \times .1 = 6.9$$

which is the only reasonably close answer to 9.2.

Average

6. C. $\dfrac{\dfrac{7}{10} \times \dfrac{14}{1} \times \dfrac{5}{1} \times \dfrac{1}{28}}{\dfrac{10}{17} \times \dfrac{3}{5} \times \dfrac{1}{6} \times \dfrac{17}{1}} = \dfrac{\dfrac{7}{4}}{\dfrac{2}{2}} = \dfrac{\dfrac{7}{4}}{1} = \dfrac{7}{4}$

7. D. Since one edge of the cube is 5, all edges equal 5. Therefore, the area of one face of the cube is (5) (5) = 25. Since a cube has 6 equal faces, its surface area will be (6) (25) = 150.

8. D. Let us calculate the value of each:

   A. (.5)(.3)(280) = 42

   B. (.33)(.7)(160) = 36.96

   C. (2)(.5)(30) = 30

   **D.** (3)(.4)(40) = 48

   E. (.6)(60) = 36

9. D. $\dfrac{(6!)(4!)}{(5!)(3!)}$

$$= \frac{(6 \cdot 5 \cdot 4 \cdot 3 \cdot 2 \cdot 1) \cdot (4 \cdot 3 \cdot 2 \cdot 1)}{(5 \cdot 4 \cdot 3 \cdot 2 \cdot 1) \cdot (3 \cdot 2 \cdot 1)}$$

$$= \frac{6 \cdot 4}{1} = 24$$

10. B. In parallelogram AEFG, if all the triangles have the same base and they all meet at F (giving them all the same height), since the formula for the area of a triangle is $\frac{1}{2} \times \text{base} \times \text{height}$, then they all have equal areas. Therefore, the ratio of the area of triangle CDF to the area of triangle ABF is 1:1, and the correct answer is B.
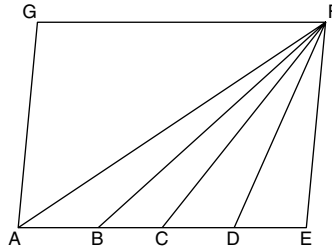
11. B. If the average of 9 numbers is 7, then the sum of these numbers must be 9×7, or 63.

If the average of 7 numbers is 9, then the sum of these numbers must be 7×9, or 63.

The sum of all 16 numbers must be $63 + 63$, or 126.

Hence, the average of all 16 numbers must be

$$126 \div 16 = {}^{126}\!/_{16} = 7^{14}\!/_{16} = 7\frac{7}{8}$$

12. C. Since all rows are equal, subtracting two rows from three rows gives a result of one row, either vertical, horizontal, or diagonal.

8	1	6
3	5	7
4	9	2

13. A. *Jane:*   Jane = J

Tom: Since Jane is six years older than Tom, Tom is six years less than Jane, or Tom = J − 6.

Chris: Since Chris is three years older than Tom, add three to Tom to get Chris's age. Chris = J − 6 + 3 = J − 3.

Phillip: Tom is five years younger than Phillip, so Phillip is five years older than Tom. So add five to Tom to get Phillip's age. J − 6 + 5 = J − 1.

The sum of their ages is

J + (J − 6) + (J − 3) + (J − 1) = 4J − 10

14. B. We solve simultaneously

$6x - 3y = 30$

$4x + y = 2$

Multiply the bottom equation by 3 and add the two equations together.

$$6x - 3y = 30$$
$$\underline{12x + 3y = 6}$$
$$18x \quad\;\; = 36$$

Thus, x = 2

Substitute back to one of the original equations, and we find that y = −6. Thus, their sum is −4.

15. B. In the right triangle, if c = 2a, then angle a = 30° and c = 60°. Because angle f is supplementary to angle c, angle f must be 120°. If angle f is 120°, then there are 60° left to be divided between angles d and b (remember there are 180° in a triangle). Because d > 2b, b must be less than 30; therefore, the correct answer is B; angle a (30°) is greater than angle b (less than 30°). Notice the way you should have marked the diagram to assist you.
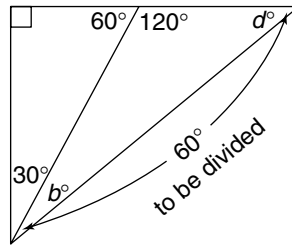
16. C. Since BD = CD, $\angle CBD = \angle C = 19^\circ$

$$\text{Hence } \angle BCD = 180 - (\angle CBD - \angle C)$$
$$= 180 - (19 + 19)$$
$$= 180 - 38$$
$$\angle BDC = 142°$$
$$\text{then } \angle BDA = 180 - \angle BDC$$
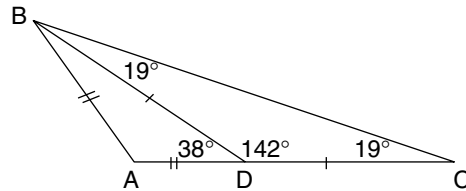$$= 180 - 142$$
$$\angle BDA = 38°$$
$$\text{Since } AB = AD, \angle ABD = \angle BDA = 38^\circ$$
$$\text{Hence } \angle A = 180 - (\angle BDA + \angle ABD)$$
$$= 180 - (38 + 38)$$
$$= 180 - 76$$
$$\angle A = 104°$$

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17. B. Since the area of a trapezoid = $\frac{1}{2} \cdot h \cdot (b_1 + b_2)$, you need to find the altitude, h.

Draw altitudes in the figure as follows:
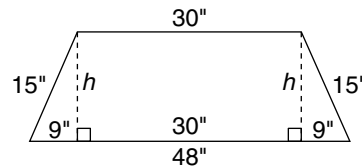
Because the triangles formed are right triangles, you use the Pythagorean theorem, which says

$$c^2 = a^2 + b^2$$
$$15^2 = 9^2 + h^2$$
$$225 = 81 + h^2$$
$$h^2 = 225 - 81$$
$$h^2 = 144$$
$$h = \sqrt{144} = 12 \text{ inches}$$

Hence, the area of the trapezoid will be

$$\frac{1}{2} \cdot h \cdot (b_1 + b_2) = \frac{1}{2} \cdot 12 \cdot (30 + 48)$$
$$= (6)(78)$$
$$= 468 \text{ square inches}$$

18. B. If two points have coordinates (x_1, y_1) and (x_2, y_2), the distance, d, between these points is defined to be

$$d = \sqrt{(-3 - 6)^2 + (y_1 - y_2)^2}$$

Because E has coordinates $(-3, 5)$ and F has coordinates $(6, -7)$, the distance between E and F is

$$EF = \sqrt{(-3 - 6)^2 [5 - (-7)]^2}$$
$$= \sqrt{(-9)^2 + (12)^2}$$
$$= \sqrt{225}$$
$$EF = 15$$
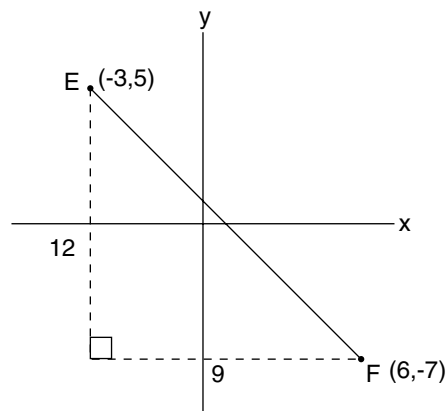
Using the Pythagorean theorem or noticing a $3 - 4 - 5$ ratio would also work.

19. A. Using 8a as a common denominator:

$$\frac{a + 8b}{8a} - \frac{a + 2b}{2a} = \frac{a + 8b}{8a} - \frac{4a + 8b}{8a} = \frac{-3a}{8a} = -\frac{3}{8}$$

20. E. Perimeter = 10 feet

$$= (10)(12) \text{ inches}$$

$$= 120 \text{ inches}$$

Perimeter $= 4s (s = \text{length of side})$

$$4s = 120$$

$$\frac{4s}{4} = \frac{120}{4}$$

So $s = 30$

Area $= s^2$

$$= (30)^2$$

$$= (30)(30)$$

$$= 900 \text{ square inches}$$

21. C. To obtain the largest sum of $(y/x) + (x/y)$, make the numerators as large as possible and the denominators as small as possible. So, for x/y, y is 24 and x is 6. Therefore, y/x = 24/6 = 4. For x/y, x is 6 and y is 24. So, x/y = 6/24 = ¼. Therefore, the largest sum of both fractions is 4 + ¼ = 4¼. You can also use x = 12 and y = 3 to get the same answer.

22. A. Because Mary will be y years old x years from now, she is y − x years old now. Hence, z years from now she will be y − x + z years old.

Team-LRN

Above Average to Difficult

23. C. Because $\sqrt{mn} = 10$ and mn = 100, the possible values for m and n are

     1 and 100   5 and 20

     2 and 50   10 and 10

     4 and 25

Because none of these combinations yield m + n = 50, choice C is correct.

24. C. ΔXYZ is inscribed in a semicircle and therefore $\angle$Z is a right angle. Hence, ΔXYZ is a right triangle and the Pythagorean theorem states

    $(XY)^2 = (XZ)^2 + (YZ)^2$

    $(17)^2 = (XZ)^2 + (15)^2$ (XY is a diameter)

    $289 = (XZ)^2 + 225$

    $(XZ)^2 = 64$

    $XZ = \sqrt{64}$

    $XZ = 8$

Now to find the area ($\frac{1}{2}$ bh)

    $\frac{1}{2} \times 15 \times 8 = \frac{1}{2} \times 120 = 60$
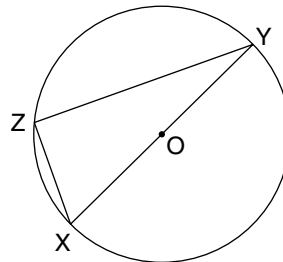
25. E. Since x, y, and z are consecutive negative integers, try plugging in values to test each choice. For example, x, y, and z could equal −1, −2, and −3 (not necessarily in that order) or, for that matter, −8, −9, and −10. Only choice E may be true, and that will occur if x equals −1, y equals −2, and z equals −3.

26. D. The only reasonable answer is 5⁵⁄₉, because 85¢ per pound is slightly closer to 93¢ per pound than 75¢ per pound. Therefore, slightly more than half of the 10 pounds must be 93¢ per pound.

Algebraically, let x stand for the pounds of 93¢ tea, then 10 − x is the 75¢ tea. This leads to the equation

    $.93x + .75(10 - x) = .85(10)$

Solving gives $93x + 750 - 75x = 850$

               $18x = 100$

                  $x = \frac{100}{18}$

       Therefore x = 5⁵⁄₉

27. B. Adding any two of three consecutive positive integers greater than 1 will always be greater than the other integer; therefore II is true. The others cannot be determined, because they depend on values and/or the order of x, y, and z.

28. D. If rhombus ABCD has a perimeter of 8, each side is 2. If diagonal AC equals 2, then triangles ABC and ACD are equilateral triangles. Diagonal BD therefore bisects AC and forms perpendicular angles. Each of the smaller triangles are $30° - 60° - 90°$ triangles with sides 1, $\sqrt{3}$, 2. Because the area of one small triangle is $\frac{1}{2}bh = \frac{1}{2}(1)\sqrt{3}$, all four triangles sum to $2\sqrt{3}$.

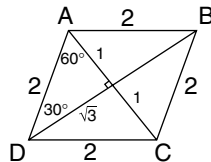**29. D.** If m and n are integers, the least possible value for $3m^2 - 2n$ may be found by assigning the value of 0 for m (therefore, $3m^2 = 0$) and then assigning the largest integer possible for n. Because $-4 < n < 5$, the largest possible integer for n is 4. Therefore:

$$3m^2 - 2n = 3(0)^2 - 2(4) = 0 - 8 = -8$$

30. E. The value of a#b =

$$\frac{a + (2a)^2}{a^2 - (2a)^2}$$

If $2a = b$, plug in 2a for b:

$$\frac{a^2 + (2a)^2}{a^2 - (2a)^2} = \frac{a^2 + 4a^2}{a^2 - 4a^2} = -\frac{5a^2}{3a^2} = -\frac{5}{3} = -1\frac{2}{3}$$

31. C. If x is increased by 50%, you can use $\frac{3}{2}x$ to represent it. You must multiply this by $\frac{2}{3}$ y in order to keep the product equal to xy. Because $\frac{2}{3}$ is a $\frac{1}{3}$ reduction, answer C is the correct response.

32. A. Only I cannot be a value of y. Options II and III can be values of y. Because x + y forms an integer z, set up the equation x + y = z. Now plug in values according to the information in each option and in the question (z is an integer greater than 0 and not divisible by 3; x is an even integer):

I — Plugging in values for z: If z is 1, y would be $\frac{2}{3}$ — not an integer and therefore not possible. If z is 2, y would be $\frac{4}{3}$ — again, not possible. z cannot be 3, because 3 is divisible by 3. If z is 4, y would be $\frac{8}{3}$ — not possible. You notice that because z cannot be a multiple of 3, all the values of y obtained by plugging in integers other than multiples of 3 are non-integers. So I, (2z)/3, cannot be a value of y. I is true.

II — If z is 1, y is 2z + 1, or 3. If x + y = z, then x + 3 = 1, so x is −2, which is an even integer. This option, 2z + 1, is a possible value of y. II is false.

III — If z is 4, then y is z/2, or 2. Because x + y = z, x equals 2, which is an even integer. So z/2 is a possible value of y. III is false.

33. E. The length of x cannot be determined because there is no indication of the overlapping length of the rectangle to the left of x. If you can't determine x, you can't determine x + y.
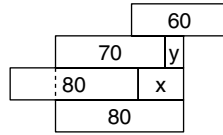
34. E. If AC ⊥ CE and AC∥FE, then ∠ACE and ∠CEF are right angles. If BD ⊥ CF and AE∥BD, then all angles formed at points G and H are right angles. Because H is the midpoint of BD, BH = HD, and therefore, CH is not only a median perpendicular to its opposite side, but also an angle bisector. Angles FCE and FCA are therefore each 45°. Similarly, angles CAE and EFC are also 45° each. So, there are three equal 45° –45° –90° triangles: triangles FGE, CGE, and AGC. Flipping the shaded quadrangle ABHG into its equal space GHDE shows that two of the equal triangles are shaded, and one is not. Therefore, the ratio of shaded area to unshaded area is 2 to 1.
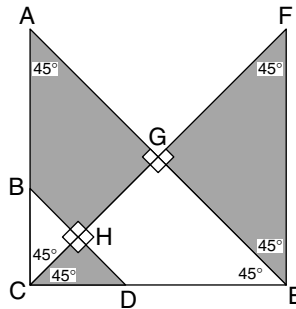
35. A. Setting the areas equal to each other:

$$(AD)(CD) = \frac{(AD) + (EF)}{2}(FH)$$

2(AD)(CD) = (AD)(FH) + (EF)(FH)

Because CD to FH is 3 to 4, simply plug in 3 for CD and 4 for FH:

2(AD)3 = (AD)4 + (EF)4

6AD = 4AD + 4EF

6AD − 4AD = 4EF

2AD = 4EF

AD = 2EF

Because AD is twice as big as EF, the ratio of EF to AD is 1 to 2.
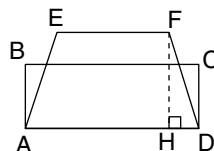
36. E. The cold water fills the tub in 20 minutes. Because the plug is out, a full tub of water drains in 30 minutes. But, because the cold water runs for another 10 minutes, the cold tap adds 10 minutes more of cold water as the tub full of cold water drains, which equals water to fill half the tub. (This water won't drain.) In addition, the hot water tap is on for 30 minutes, producing hot water to fill the tub ¾ full (since the hot water would fill the tub in 40 minutes). Therefore, because ½ tub + ¾ tub equals more than 1 tub of water (in addition to the 1 tub being drained), Tom will return to find the tub overflowing. Working the problem mathematically looks like this:

$$\frac{1}{20} + \frac{1}{40} - \frac{1}{30} = \frac{1}{x}$$

$$\frac{6}{120} + \frac{3}{120} - \frac{4}{120} = \frac{1}{x}$$

$$\frac{9}{120} - \frac{4}{120} = \frac{1}{x}$$

$$\frac{5}{120} = \frac{1}{x}$$

$$5x = 120$$

$$x = \frac{120}{5}$$

$$x = 24 \text{ minutes}$$

Therefore, the tub will fill in 24 minutes. Because Tom returned in 30 minutes, the tub is overflowing.

INTRODUCTION TO GRAPHS AND CHARTS

Graphs and charts appear in the quantitative section of the exam.

Ability Tested

You will need to understand and derive information from graphs, charts, and tables. Many of the problems require brief calculations based on the data, so your mathematical ability is also tested.

Basic Skills Necessary

The mathematics associated with diagrammatic interpretation does not go beyond high-school level. Your familiarity with a wide range of chart and graph types will help you feel comfortable with these problems and read the data accurately.

Directions

You are given data represented in chart or graph form. Following each set of data are questions based on that data. Select the best answer to each question by referring to the appropriate chart or graph and mark your choice on the screen. Use only the given or implied information to determine your answer.

Analysis

Remember that you are looking for the best answer, not necessarily the perfect answer. Often, graph questions ask you for an approximate answer; if this happens, don't forget to round off numbers to make your work easier.

Use only the information given; never "read into" the information on a graph.

Suggested Approach with Samples

Here are some helpful strategies for extracting accurate information, followed by some sample graph questions.

Skim the question and quickly examine the whole graph before starting to work the problem; this type of prereading will tell you what to look for.

Sometimes the answer to a question is available in supplementary information given with a graph (heading, scale factors, legends, and so on); be sure to read this information.

Look for the obvious: dramatic trends, high points, low points, and so on. Obvious information often leads directly to an answer.

You may need to scroll the graph to see all the information it contains.

Charts and Tables

Charts and tables are often used to give an organized picture of information, or *data.* Make sure that you understand *the information that is given.* Column headings and line items give you the important information. These titles give the numbers meaning.

First, pay special attention to what information is given in the chart. For example, the following chart shows the number of "Burger Sales for the Week of August 8–14." The days of the week are given along the left side of the chart. The number of *hamburgers* for each day is given in one column and the number of *cheeseburgers* in the other column.

Samples

Questions 1–3 refer to the following chart.

BURGER SALES FOR THE WEEK OF AUGUST 8–14		
Day	**Hamburgers**	**Cheeseburgers**
Sunday	120	92
Monday	85	80
Tuesday	77	70
Wednesday	74	71
Thursday	75	72
Friday	91	88
Saturday	111	112

---

1. On which day were the most burgers sold (hamburgers and cheeseburgers)?

   A. Sunday

   B. Monday

   C. Friday

   D. Saturday

   E. Tuesday

D. To answer this question, you must understand the chart and do some simple computation. Working from the answers is probably the easiest method.

A. Sunday $120 + 92 = 212$
B. Monday $85 + 80 = 165$
C. Friday $91 + 88 = 179$
D. Saturday $111 + 112 = 223$
E. Tuesday $77 + 70 = 147$

Another method is to *approximate* the answers.

---

2. On how many days were more hamburgers sold than cheeseburgers?

   A. 7

   B. 6

   C. 5

   D. 4

   E. 3

B. To answer this question, you must compare the sales for each day. Hamburgers outsold cheeseburgers every day except Saturday.

---

3. If the pattern of sales continues,

   A. the weekend days will have the fewest number of burger sales next week.

   B. the cheeseburgers will outsell hamburgers next week.

   C. generally, when hamburger sales go up, cheeseburger sales will go up.

   D. hamburgers will be less expensive than cheeseburgers.

   E. more customers will buy hamburgers than cheeseburgers next Saturday.

C. To answer this question, you must notice one of the trends. Most days that hamburger sales go up, cheeseburger sales go up (with the exception of Saturday to Sunday).

Graphs

Information may be displayed in many ways. The three basic types of graphs you should know are bar graphs, line graphs, and pie graphs (or pie charts).

Bar Graphs

Bar graphs convert the information in a chart into separate bars or columns. Some graphs list numbers along one edge and places, dates, people, or things (individual categories) along another edge. Always try to determine the *relationship* between the columns in a graph or chart.

Question 4 refers to the following graph.

Number of Delegates Committed to Each Candidate
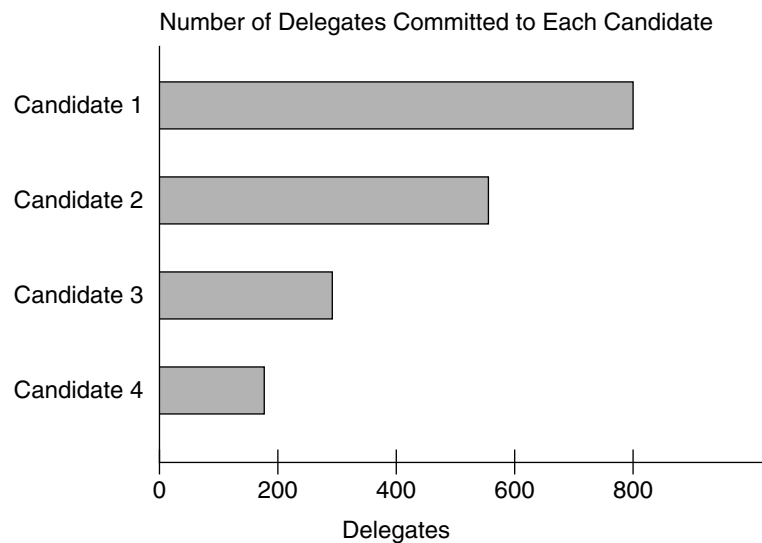
4. Candidate 1 has approximately how many more delegates committed than does Candidate 2?

   A. 150

   B. 200

   C. 250

   D. 400

   E. 450

C. To understand this question, you must be able to read the bar graph and make comparisons. Notice that the graph shows the "Number of Delegates Committed to Each Candidate," with the numbers given along the bottom of the graph in

increases of 200. The names are listed along the left side. Candidate 1 has approximately 800 delegates (possibly a few more). The bar graph for Candidate 2 stops about three quarters of the way between 400 and 600. Now, consider that halfway between 400 and 600 would be 500. So Candidate 2 has about 550.

$800 - 550 = 250$

Samples

Questions 5 – 7 refer to the following graph.

Gross Receipts of Several Fast-Food Restaurants
1994-1996

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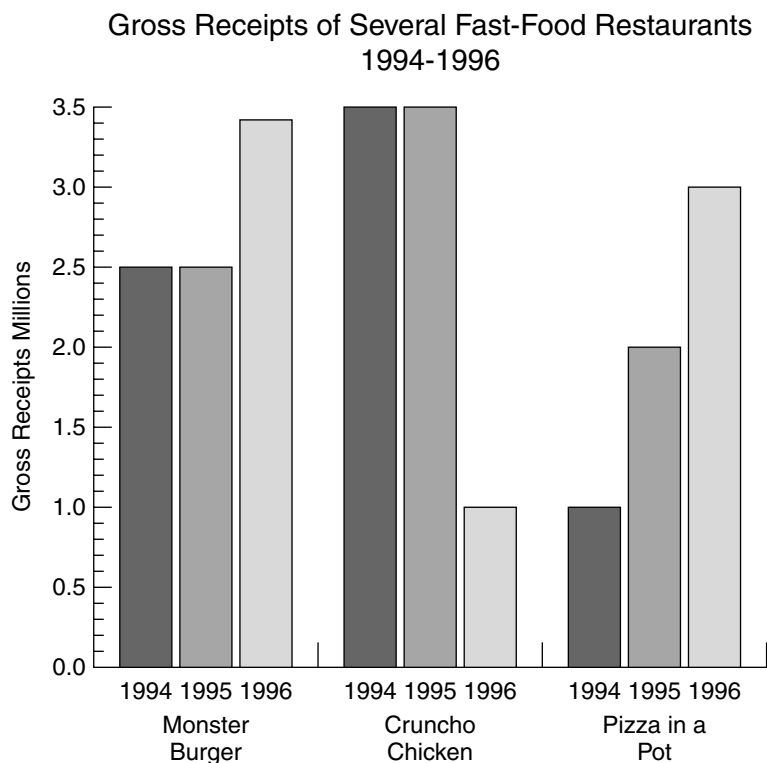
5. The 1994–96 gross receipts of Monster Burger exceeded those of Pizza in a Pot by approximately how much?

A. 0.2 million

B. 2 million

C. 8.2 million

D. 8.4 million

E. 17 million

B. In this graph, there are multiple bars representing each fast-food category; each single bar stands for the receipts from a single year.

You may be tempted to write out the numbers as you do your arithmetic (3.5 million = 3,5000,000). This step is unnecessary, as it often is on graphs that use large numbers. Because all measurements are in millions, adding zeros doesn't add precision to the numbers.

Referring to the Monster Burger bars, you see that gross receipts are as follows: 1994 = 2.5, 1995 = 2.5, 1996 = 3.4 (if you have trouble seeing how the bars line up with the numbers, you may want to use a piece of scratch paper against the screen as a straightedge to determine a number like this last one). Totaling the receipts for all three years, you get 8.4.

Referring to the Pizza In A Pot bars, you see that gross receipts are as follows: 1994 = 1, 1995 = 2.1, 1996 = 3 (don't designate numbers beyond the nearest tenth, because the graph numbers and the answer choices prescribe no greater accuracy than this). Totaling the receipts for all three years, you get 6.1.

So, Monster Burger exceeds Pizza In A Pot by 2.3 million. The answer that best approximates this figure is B.

---

6. From 1995 to 1996, the percent increases in receipts for Pizza In A Pot exceeded the percent increase for Monster Burger by approximately how much?

- **A.** 0%
- **B.** 2%
- **C.** 10%
- **D.** 15%
- **E.** 43%

C. Graph questions on the GRE may ask you to calculate percent increase or percent decrease. The formula for figuring either of these is the same:

$$\frac{\text{amount of the change}}{\text{starting amount (follows the word } \textit{from})}$$

In this case, you may first calculate the percent increase for Monster Burger.

Gross receipts in 1995 = 2.5
Gross receipts in 1996 = 3.4
Amount of the change = 0.9

The 1995 amount is the "starting" or "from" amount.

$$\frac{\text{amount of change}}{\text{"starting" amount}} = \frac{0.9}{2.5} = 0.36 = 36\%$$

Percent increase for Pizza In A Pot:

> Gross receipts in 1995 = 2.1
>
> Gross receipts in 1996 = 3
>
> Amount of the change = 0.9

$$\frac{\text{amount of change}}{\text{"starting" amount}} = \frac{0.9}{2.1} \cong 0.428 \cong 43\%$$

So, Pizza In A Pot exceeds Monster Burger by 7% (43% − 36%). The answer that best approximates this figure is C.

---

7. The 1996 decline in Cruncho Chicken's receipts may be attributed to

   A. an increase in the popularity of burgers.

   B. an increase in the popularity of pizza.

   C. a decrease in the demand for chicken.

   D. predictable slump attributable to the increase in terrorist activity.

   E. It cannot be determined from the information given.

E. Never use information that you know is not given. In this case, the multiple factors that could cause a decline in receipts are not represented by the graph. All choices except E require that you speculate beyond the information given.

Line Graphs

Line graphs convert data into points on a grid. These points are then connected to show a relationship between the items, dates, times, and so on. Notice the slopes of lines connecting the points. These lines will show increases and decreases. The sharper the slope *upward*, the greater the *increase*. The sharper the slope *downward*, the greater the *decrease*. Line graphs can show trends, or changes, in data over a period of time.

Samples

Questions 8–9 refer to the following graph.

American Indian Population in the United States from 1910 to 1980
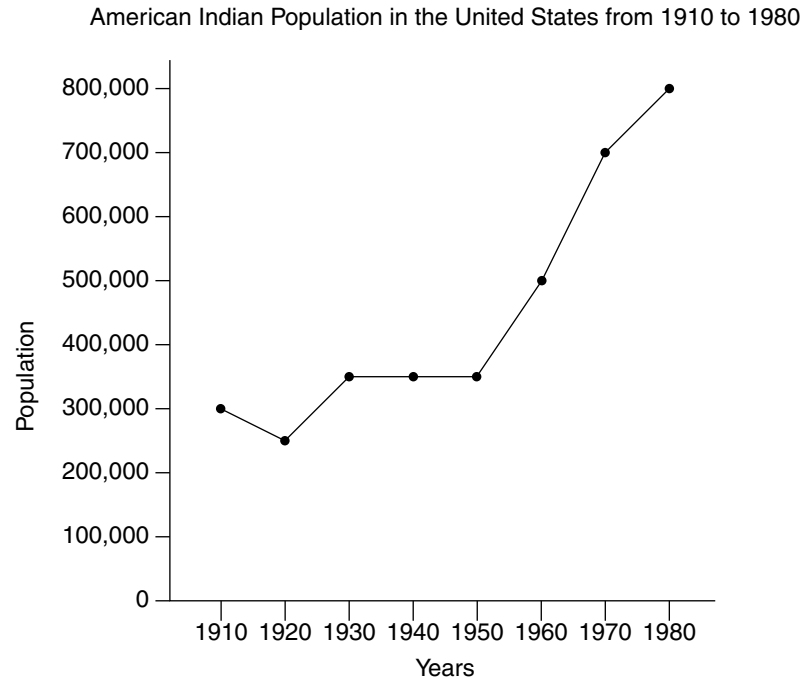
8. In which of the following years were there about 500,000 American Indians?

    A. 1940

    B. 1950

    C. 1960

    D. 1970

    E. 1975

C. To answer this question, you must be able to read the graph. The information along the left side of the graph shows the number of Indians in increases of 100,000. The bottom of the graph shows the years from 1910 to 1980. Notice that in 1960 there were about 500,000 American Indians in the United States. Using the edge of your answer sheet like a ruler helps you see that the dot in the 1960 column lines up with 500,000 on the left.

9. During which of the following time periods was there a decrease in the American Indian population?

    A. 1910 to 1920

    B. 1920 to 1930

    C. 1930 to 1940

    D. 1960 to 1970

    E. 1970 to 1980

A. Because the slope of the line goes *down* from 1910 to 1920, there must have been a decrease. If you read the actual numbers, you notice a decrease from 300,000 to 250,000.

Samples

Questions 10–12 refer to the following graph.

Average Score (Statewide)
on Student Aptitude Test
1978-1983
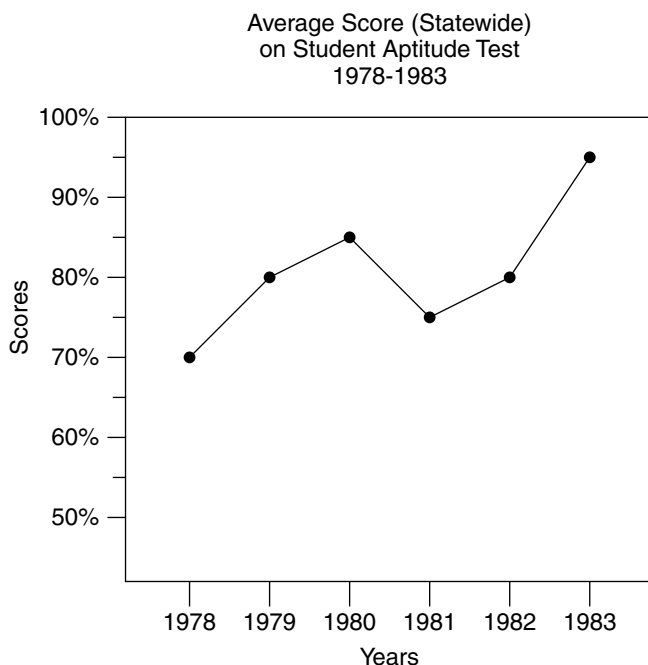
10. Between which two years was the greatest rise in average test scores?

    A. 1978 and 1979

    B. 1979 and 1980

    C. 1980 and 1981

    D. 1981 and 1982

    E. 1982 and 1983

E. The most efficient way to compute greatest rise is to locate the *steepest* upward slope on the chart. Note that the steepest climb is between 1982 and 1983. Therefore, choice E indicates the greatest rise in average test scores.

11. In which year was the average score approximately 85%?

    A. 1978

    B. 1979

    C. 1980

    D. 1981

    E. 1982

C. According to the graph, the average test score was approximately 85% in 1980 (C). In cases where you must read the graph for a precise measurement, using your answer sheet as a straightedge to more accurately compare points with the grid marks along the side may be helpful.

12. Approximately what was the highest score achieved statewide on the test?

    A. 80%

    B. 85%

    C. 90%

    D. 97%

    E. cannot be determined

E. The first thing you should do when confronted with a graph or chart is read its title to understand what the graph tells you. In this case, the graph is relating information about *average scores.* It tells you nothing about the *highest* score achieved. Thus, E is the correct answer.

Circle Graphs (Pie Charts)

A circle graph, or pie chart, shows the relationship between the whole circle (100%) and the various slices that represent portions of that 100%. The larger the slice, the higher the percentage.

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Samples

Questions 13–15 refer to the follow graph.
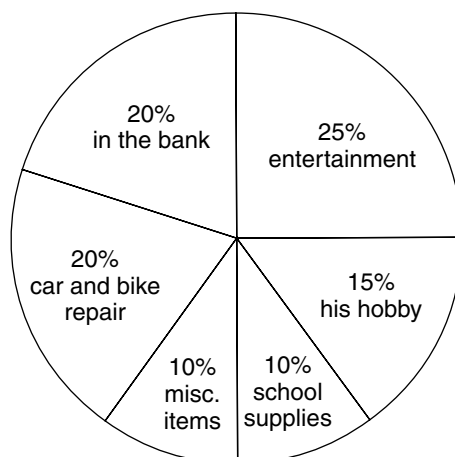
How John Spends His Monthly Paycheck

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13. John spends one fourth of his monthly paycheck on

    A. his hobby

    B. car and bike repair

    C. entertainment

    D. school supplies

    E. in the bank

C. To answer this question, you must be able to read the graph and apply some simple math. Notice how the information is given in the graph. Each item is given along with the percent of money spent on that item. Since one quarter is the same as 25%, entertainment is the answer for which you're looking.

---

14. If John receives $100 on this month's paycheck, how much will he put in the bank?

    A. $2

    B. $20

    C. $35

    D. $60

    E. $80

B. To answer this question, you must read the graph carefully and apply some simple math. John puts 20% of his income in the bank. 20% of $100 is $20, so he will put $20 in the bank.

---

15. The ratio of the amount of money Johns spends on his hobby to the amount he puts in the bank is

   A. 1/2

   B. 5/8

   C. 2/3

   D. 3/4

   E. 7/8

D. To answer this question, you must use the information in the graph to make a ratio.

$$\frac{\text{his hobby}}{\text{in the bank}} = \frac{15\%}{20\%} = \frac{15}{20} = \frac{3}{4}$$

Notice that the ratio of 15%/20% reduces to 3/4.

Samples

Questions 16–18 refer to the following graphs.

Gross Receipts of All Major
Fast-Food Restaurants
1994-1996
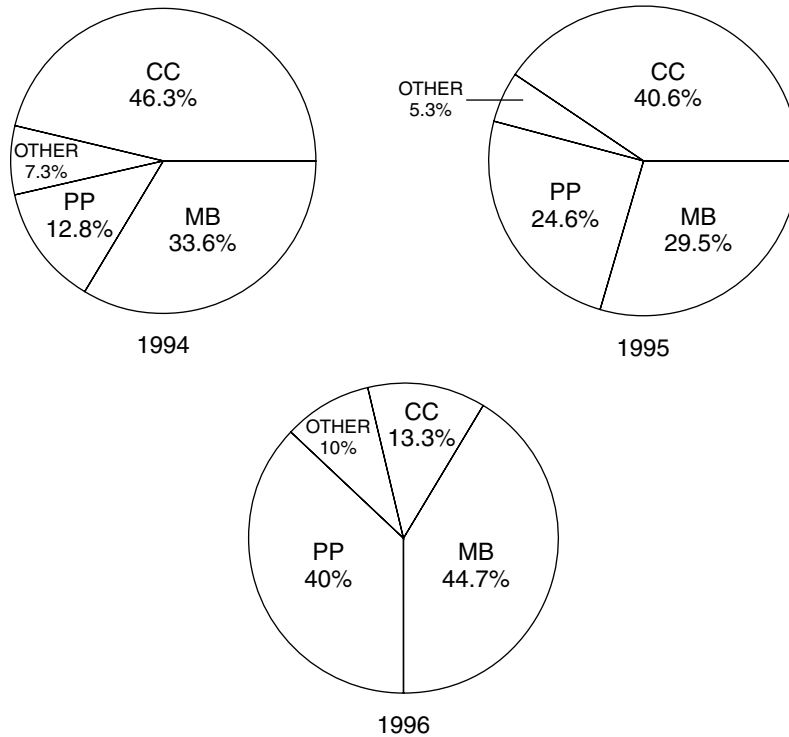
1994

1995

1996

Gross Receipts for 1994: $7,500,000   MB–Monster Burger
Gross Receipts for 1995: $8,550,000   CC–Cruncho Chicken
Gross Receipts for 1996: $8,100,000   PP–Pizza In A Pot

---

16. The gross receipts for 1994 are approximately what percentage of the gross receipts for all three years?

    A.   30%

    B. 46.3%

    C. 46.7%

    D.   50%

    E. It cannot be determined from the information given.

A. You can solve this problem without referring to the graphs; the necessary information is available in the list of gross receipts below the graphs. Don't write out all the zeros when calculating with these large figures; brief figures are easier to work with.

Gross receipts for 1994 = 7.5 million.

Gross receipts for all three years = 7.5 + 8.6 + 8.1 = 24.2 million.

$$\frac{7.5}{24.2} = 31\%$$

The answer that best approximates 31% is 30% (A). Notice that even without doing the calculations, you may approximate 30% by realizing that the gross receipts for any one year are about a third of the total.

---

17. Over all three years, the average percentage of gross receipts for Cruncho Chicken exceeds the average percentage of gross receipts for Pizza In A Pot by approximately how much?

    A. 53%

    B. 30%

    C. 23%

    D.   8%

    E.   4%

D. To calculate the average percentage for Cruncho Chicken, add the percentages for each year and divide by 3.

    46.3 + 40.6 + 13.3 = 100.2 ÷ 3 = 33.4%

Do the same for Pizza In A Pot.

    12.8 + 24.6 + 40 = 77.4 ÷ 3 = 25.8%

Cruncho Chicken exceeds Pizza In A Pot by 33.4 − 25.8 = 7.6%.

8% best approximates this figure (D).

> **18.** The gross receipts earned by other restaurants in 1996 amount to precisely how much?
>
> **A.** $1,810,650
>
> **B.** $810,000
>
> **C.** $547,500
>
> **D.** $453,150
>
> **E.** $405,000

B. In 1996, other restaurants earned precisely 10%. 10% of $8,100,000 = $810,000, (B).

A PATTERNED PLAN OF ATTACK
Graphs and Charts

Skim the first question.

↓

Examine the entire graph.
Notice headings, scale factors, legends, and dramatic trends.

↓

Focus on what you are looking for in each question.

↓

If a great deal of calculating is necessary,
check the proximity of the answers to each other and approximate.
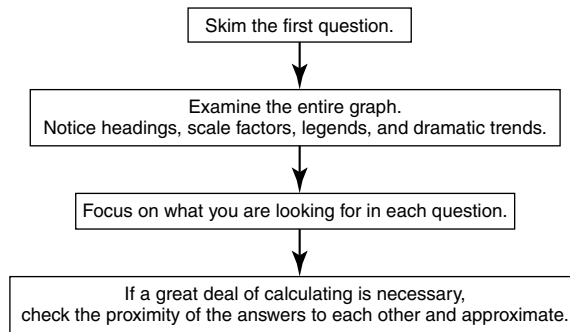
Practice Graphs and Chart Problems

Set 1

Questions 1–5 refer to the following graphs.

AVERAGE FAMILY'S EXPENSES

1970
Average Income $12,000

1975
Average Income $16,000
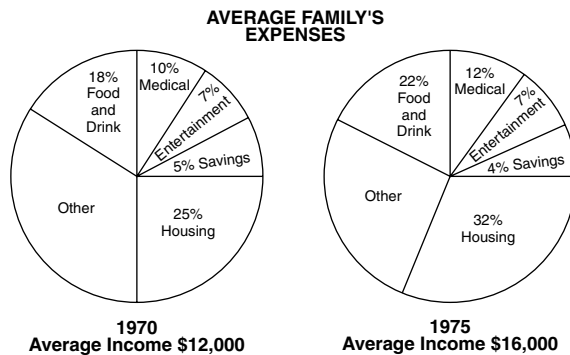
1. For the year in which the average family's housing expenses were $3000, what were the average family's medical expenses?

    A. $600

    B. $1000

    C. $1200

    D. $1920

    E. $2400

2. What was the approximate ratio of income spent on housing in 1970 to income spent on housing in 1975?

    A.   4 to 7

    B.   3 to 5

    C.   25 to 32

    D.   1 to 1

    E.   3 to 2

3. What was the percent increase from 1970 to 1975 in the percentage spent on food and drink?

    A.   4%

    B.   18%

    C.   22%

    D.   40%

    E.   50%

4. How much more did the average family spend on entertainment in 1975 than in 1970?

    A. $4000

    B. $1120

    C. $870

    D. $400

    E. $280

5. Which of the following statements about the average family's expenses can be inferred from the graph?

   I. More money was put into savings in 1970 than in 1975.

  II. More money was spent for food and drink in 1975 than for food and drink in 1970.

 III. More money was spent in 1975 for "other" expenses than for "other" expenses in 1970.

  A. I only

  B. II only

  C. III only

  D. II and III only

  E. I, II, and III

Set 2

Questions 6–10 refer to the following graphs.

BASEBALL CARD PRICES FOR SELECTED 1956 SERIES
PRICES REALIZED AT START OF 1991 SEASON

PRICE FLUCTUATION DURING SEASON
OF 5 SELECTED 1956 CARDS
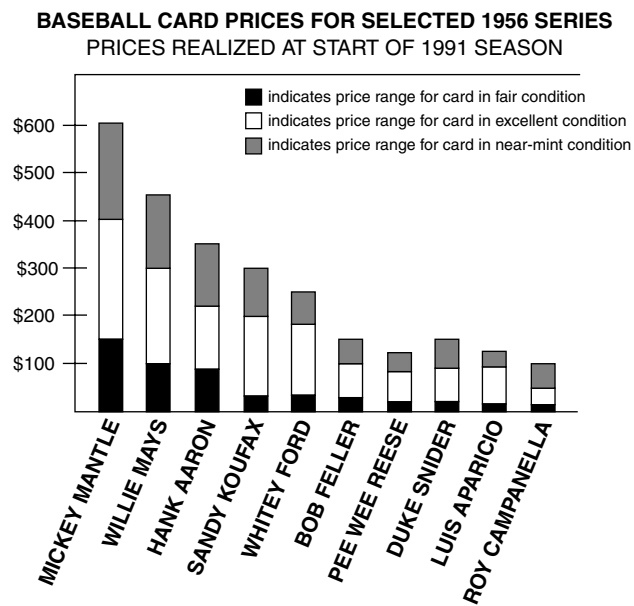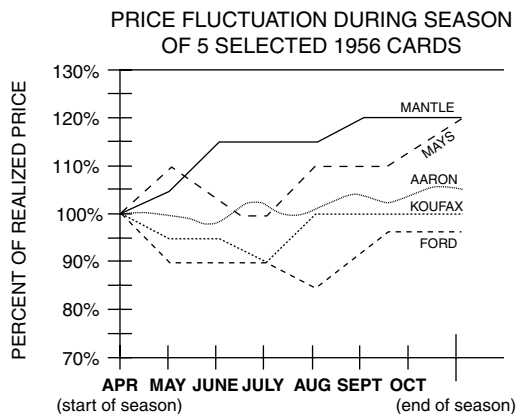
6. At the start of the 1991 season, the price range realized for a 1956 Bob Feller card in excellent condition was

A. $100 to $200

B. $100 to $150

C. $50 to $100

D. $30 to $100

E. $0 to $30

7. The price range realized in September for a near-mint–condition Mickey Mantle card was

A. $150 to $400

B. $400 to $600

C. $440 to $660

D. $480 to $720

E. $600 to $800

8. At the start of the season, which of the following cards had the greatest ratio of near-mint–condition range to excellent-condition range?

A. Willie Mays

B. Whitey Ford

C. Bob Feller

D. Duke Snider

E. Roy Campanella

9. What was the difference in price realized anytime during the 1991 season between the highest-priced excellent-condition Willie Mays card and the highest-priced, near-mint–condition Hank Aaron card?

   A. $7.50

   B. $10.00

   C. $12.50

   D. $30.00

   E. $60.00

10. Which of the following can be inferred from the graphs above?

   I. Any price realized during the 1991 season for a near-mint–condition Sandy Koufax card would be enough to purchase one each of fair-condition cards of Whitey Ford, Bob Feller, Pee Wee Reese, Duke Snider, Luis Aparicio, and Roy Campanella.

   II. The 1990 end-of-season price for a near-mint–condition Whitey Ford was less than its start-of-season price.

   III. The highest price realized during the 1991 season for an excellent-condition Bob Feller is less than the lowest price realized during the 1991 season for a near-mint–condition Pee Wee Reese.

   A. I only

   B. II only

   C. III only

   D. I and II only

   E. II and III only

Set 3

Questions 11–15 refer to the graph below.

U.S. Indian Head Nickels
Average Retail Cost
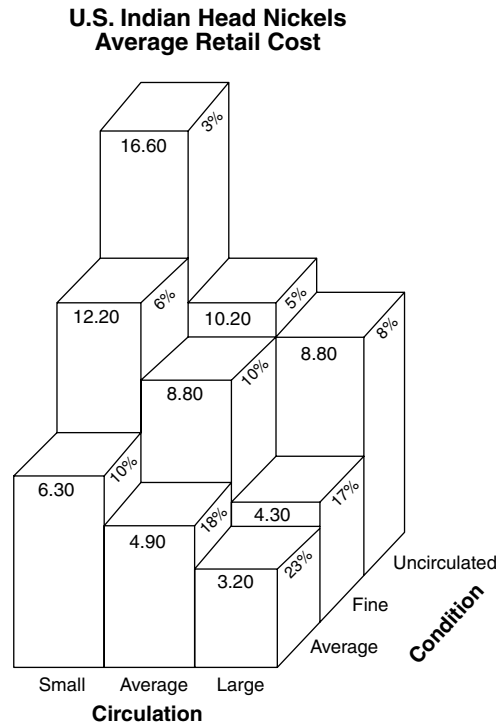
Percentages indicate percent of total coins available for sale.

Other numbers indicate average price of each coin.

11. Which of the following coin classifications represents the most coins?

   A. large circulation

   B. average circulation

   C. average condition

   D. fine condition

   E. small circulation

12. If 10,000 uncirculated coins were available for sale, in what range would be the average cost per coin?

   A. $9.01–$9.50

   B. $9.51–$10.00

   C. $10.01–$10.50

   D. $10.51–$11.00

   E. $11.01–$11.50

13. If 20,000 total coins are available for sale, how many of them would be coins of average circulation?

    A. 3,500–5,000

    B. 5,001–6,500

    C. 6,501–8,000

    D. 8,001–9,500

    E. 9,501–11,000

14. If a coin collector who once collected only fine condition coins were to now collect both uncirculated and fine condition coins, the number of coins now available for her collection would represent an increase of approximately what percent over the number of coins formerly available?

    A. 16%

    B. 27%

    C. 33%

    D. 48%

    E. 66%

15. If 100 total coins are available for sale, how much more would a collector pay for all the average circulation coins of fine condition than for all the small circulation coins of average condition?

    A. $15

    B. $25

    C. $35

    D. $63

    E. $88

Answers and Explanations for Graphs and Charts Sample Problems

Set 1

1. **C.** In 1970, housing was 25% of $12,000, or $3000. In that same year, medical expenses were 10% of $12,000, or $1200.

2. **B.** In 1970, income spent on housing was 25% of $12,000, or $3000. In 1975, income spent on housing was 32% of $16,000, or $5120. The ratio is 3000 to 5120, or approximately 3 to 5.

3. **C.** There was an increase from 18% to 22%, which is a 4% increase. Therefore, a 4% increase from 18% is a 22% increase in the percent spent on food and drink.

4. **E.** In 1975, entertainment was 7% of $16,000, or $1120. In 1970, entertainment was 7% of $12,000, or $840. So $280 more was spent on entertainment in 1975 than in 1970.

5. **B.** II only. Statement I cannot be inferred from the graph: Savings in 1970 were 5% of $12,000, or $600, whereas savings in 1975 were 4% of $16,000, or $640. Statement II can be inferred from the graph: Expenses for food and drink were a larger percentage of a larger total in 1975 than the corresponding figures in 1970. Statement III cannot be inferred from the graph: In 1970, "other" expenses comprised 35% of $12,000, or $4200. In 1975, "other" expenses comprised 23% of $16,000, or $3680.

Set 2

6. **D.** The range for excellent condition (white part of the bar) for Bob Feller's card extends from $30 to $100.

7. **D.** In September, a Mantle card realized 120% of its start-of-season price. The price range at the start of season for a near-mint Mantle card was $400 to $600. Therefore, increasing its range by 20% would indicate a new range of $480 to $720.

8. **E.** Roy Campanella had a greater range for near-mint condition ($50 to $100, or a range of $50) compared to the range for excellent condition ($20 to $50, or $30). Campanella is the only card whose near-mint–condition range exceeded its excellent-condition range.

9. **A.** An excellent-condition Willie Mays card had a top price of $300 at the start of the season and realized 120% of its price at the end of the season. So the highest price for such a card was $360. A near-mint–condition Hank Aaron card started the season with a top price of $350 and reached 105% of its price in October, or $367.50. So the difference in the highest price of these cards was $7.50.

10. **A.** I is true. At its lowest price, a near-mint Sandy Koufax card realized 90% (in July) of $200, or $180. The top prices for fair-condition cards of Whitey Ford, Bob Feller, Pee Wee Reese, Duke Snider, Luis Aparicio, and Roy Campanella were $50, $30, $25, $20, and $20, respectively, which equals $170.

    II is false. No information is given about end-of-season 1990 prices.

    III is false. The highest price realized for an excellent-condition Bob Feller was $100, whereas the lowest price for a near-mint–condition Pee Wee Reese was under $100.

Set 3

11. **C.** Adding the percentages, the large circulation coins represent (23%, 17%, 8%) 48%, while the average condition coins represent (23%, 18%, 10%) 51%.

12. **D.** The number of coins is irrelevant. Since 3%, 5%, and 8% add up to 16%, we have the following:

    $16.60 \times 3\%$ plus $10.20 \times 5\%$ plus $8.80 \times 8\% = 1.712$,

    and $1.712/.16 = 10.70$, which is the average price.

13. **C.** There are (5%, 10%, 18%) 33% in this category. Thus 33% of 20,000 is 6600.

14. **D.** The coin collector previously collected only fine condition coins, or a total of $17\% + 10\% + 6\% = 33\%$ of the coins available for sale. Now the collector collecting both fine and uncirculated coins adds another 16% (3% + 5% + 8%) of the coins available for sale. You find the percent increase by dividing the change (in this case, 16%) by the starting point (in this case, 33%): $16 \div 33$ is approximately 48%.

15. **B.** Average circulation coins of fine condition represent 10% of the total of 100, or 10 coins at $8.80 each for a total price of $88. Small circulation coins of average condition represent 10% of the total of 100, or 10 coins at $6.30 each for a total price of $63. Therefore, a collector would pay $25 more for all the average circulation coins of fine condition than for all the small circulation coins of average condition.

IMPORTANT *SYMBOLS,* TERMINOLOGY, FORMULAS, AND GENERAL MATHEMATICAL INFORMATION

Common *Math* Symbols and Terms

Symbol References:

$=$ is equal to

$\neq$ is not equal to

$>$ is greater than

$<$ is less than

$\geq$ is greater than or equal to

$\leq$ is less than or equal to

$\parallel$ is parallel to

$\perp$ is perpendicular to

Natural numbers — the counting numbers: 1, 2, 3, . . .

Whole numbers — the counting numbers beginning with zero: 0, 1, 2, 3, . . .

Integers — positive and negative whole numbers and zero: . . . $-3, -2, -1, 0, 1, 2, . . .$

Odd numbers — numbers not divisible by 2: 1, 3, 5, 7, . . .

Even numbers — numbers divisible by 2: 0, 2, 4, 6, . . .

Prime number — number divisible by only 1 and itself: 2, 3, 5, 7, 11, 13, . . .

Composite number — number divisible by more than just 1 and itself: 4, 6, 8, 9, 10, 12, 14, 15, . . .

Squares — the result when numbers are multiplied by themselves, $(2 \cdot 2 = 4)$ $(3 \cdot 3 = 9)$: 1, 4, 9, 16, 25, 36, . . .

Cubes — the result when numbers are multiplied by themselves twice, $(2 \cdot 2 \cdot 2 = 8)$, $(3 \cdot 3 \cdot 3 = 27)$: 1, 8, 27, . . .

Math Formulas

Triangle	Perimeter = $s_1 + s_2 + s_3$
	Area = $\frac{1}{2}bh$
Square	Perimeter = $4s$
	Area = $s \cdot s$, or s^2
Rectangle	Perimeter = $2(b + h)$, or $2b + 2h$
	Area = bh or lw
Parallelogram	Perimeter = $2(l + w)$, or $2l + 2w$
	Area = bh
Trapezoid	Perimeter = $b_1 + b_2 + s_1 + s_2$
	area = $\frac{1}{2}h(b_1 + b_2)$, or $h\left(\dfrac{b_1 + b_2}{2}\right)$
Circle	Circumference = $2\pi r$, or πd
	Area = πr^2
Cube	Volume = $s \cdot s \cdot s = s^3$
	Surface area = $s \cdot s \cdot 6$
Rectangular Prism	Volume = $l \cdot w \cdot h$
	Surface area = $2(lw) + 2(lh) + 2(wh)$

Pythagorean theorem (for right triangles) is $a^2 + b^2 = c^2$. (The sum of the squares of the legs of a right triangle equals the square of the hypotenuse.)

Team-LRN

Important Equivalents

Memorizing the following can eliminate unnecessary computations:

$\frac{1}{100} = .01 = 1\%$ $\frac{1}{3} = .33\frac{1}{3} = 33\frac{1}{3}\%$

$\frac{1}{10} = .1 = 10\%$ $\frac{2}{3} = .66\frac{2}{3} = 66\frac{2}{3}\%$

$\frac{1}{5} = \frac{2}{10} = .2 = .20 = 20\%$ $\frac{1}{8} = .125 = .12\frac{1}{2} = 12\frac{1}{2}\%$

$\frac{3}{10} = .3 = .30 = 30\%$ $\frac{3}{8} = .375 = .37\frac{1}{2} = 37\frac{1}{2}\%$

$\frac{2}{5} = \frac{4}{10} = .4 = .40 = 40\%$ $\frac{5}{8} = .625 = .62\frac{1}{2} = 62\frac{1}{2}\%$

$\frac{1}{2} = \frac{5}{10} = .5 = .50 = 50\%$ $\frac{7}{8} = .875 = .87\frac{1}{2} = 87\frac{1}{2}\%$

$\frac{3}{5} = \frac{6}{10} = .6 = .60 = 60\%$ $\frac{1}{6} = .16\frac{2}{3} = 16\frac{2}{3}\%$

$\frac{7}{10} = .7 = .70 = 70\%$ $\frac{5}{6} = .83\frac{1}{3} = 83\frac{1}{3}\%$

$\frac{4}{5} = \frac{8}{10} = .8 = .80 = 80\%$ $1 = 1.00 = 100\%$

$\frac{9}{10} = .9 = .90 = 90\%$ $2 = 2.00 = 200\%$

$\frac{1}{4} = \frac{25}{100} = .25 = 25\%$ $3\frac{1}{2} = 3.5 = 3.50 = 350\%$

$\frac{3}{4} = \frac{75}{100} = .75 = 75\%$

Measures

Customary System, or English System

Length

12 inches (in) = 1 foot (ft)
3 feet = 1 yard (yd)
36 inches = 1 yard
1760 yards = 1 mile (mi)
5280 feet = 1 mile

Area

144 square inches (sq in) = 1 square foot (sq ft)
9 square feet = 1 square yard (sq yd)

Weight

16 ounces (oz) = 1 pound (lb)

2000 pounds = 1 ton (T)

Capacity

2 cups = 1 pint (pt)

2 pints = 1 quart (qt)

4 quarts = 1 gallon (gal)

4 pecks = 1 bushel

Time

365 days = 1 year

52 weeks = 1 year

10 years = 1 decade

100 years = 1 century

Metric System, or The International System of Units

Length — meter

Kilometer (km) = 1000 meters (m)

Hectometer (hm) = 100 meters

Dekameter (dam) = 10 meters

10 decimeters (dm) = 1 meter

100 centimeters (cm) = 1 meter

1000 millimeters (mm) = 1 meter

Volume — liter

Common measures:

1000 milliliters (ml, or mL) = 1 liter (l, or L)

1000 liters = 1 kiloliter (kl, or kL)

Mass — gram

Common measures:

1000 milligrams (mg) = 1 gram (g)
1000 grams = 1 kilogram (kg)
1000 kilograms = 1 metric ton (t)

Problem-solving Words and Phrases

Words that signal an operation:

Addition	*Multiplication*	*Subtraction*	*Division*
Sum	Of	Difference	Quotient
Total	Product	Less	Divisor
Plus	Times	Decreased	Dividend
Increase	At (sometimes)	Reduced	Ratio
More than	Total (sometimes)	Fewer	Parts
Greater than		Have left	

Geometry Terms and Basic Information

Angles

Vertical angles — Formed by two intersecting lines, across from each other, always equal

Adjacent angles — Next to each other, share a common side and vertex

Right angle — Measures 90 degrees

Obtuse angle — Greater than 90 degrees

Acute angle — Less than 90 degrees

Straight angle, or line — Measures 180 degrees

Angle bisector — Divides an angle into two equal angles

Supplementary angles — Two angles whose total is 180 degrees

Complementary angles — Two angles whose total is 90 degrees

Lines

Two points determine a line.

Parallel lines — Never meet

Perpendicular lines — Meet at right angles

Polygons

Polygon — A many-sided (more than two sides) closed figure

Regular polygon — A polygon with all sides and all angles equal

Triangle — Three-sided polygon; the interior angles total 180 degrees

- Equilateral triangle — All sides equal
- Isosceles triangle — Two sides equal
- Scalene triangle — All sides of different lengths
- Right triangle — A triangle containing a right angle

In a triangle — Angles opposite equal sides are equal

In a triangle — The longest side is across from the largest angle, and the shortest side is across from the smallest angle

In a triangle — The sum of any two sides of a triangle is larger than the third side

In a triangle — An exterior angle is equal to the sum of the remote two angles

Median of a triangle — A line segment that connects the vertex and the midpoint of the opposite side

Quadrilateral — Four-sided polygon; the interior angles total 360 degrees

- Parallelogram — A quadrilateral with opposite sides parallel
- Rectangle — A parallelogram with all right sides
- Rhombus — A parallelogram with equal sides
- Square — A parallelogram with equal sides and all right angles
- Trapezoid — A quadrilateral with two parallel sides
- Pentagon — A five-sided polygon
- Hexagon — A six-sided polygon
- Octagon — An eight-sided polygon

Circles

Radius of a circle — A line segment from the center of the circle to the circle itself

Diameter of a circle — A line segment that starts and ends on the circle and goes through the center

Chord — A line segment that starts and ends on the circle

Arc — A part of the circle

Circle — Composed of 360°

INTRODUCTION TO THE ANALYTICAL ABILITY *SECTION*

Prior to starting the exam, you will walk through a basic tutorial program explaining how to use the computer for this exam. The computer-adaptive GRE gives you 60 minutes to answer 35 analytical ability questions. These questions are composed of Analytical Reasoning questions and Logical Reasoning questions, and the types are intermingled. You will receive a medium-difficulty question to start with, and then the computer will adapt the level of questions you receive based on your responses to the previous questions. You will do all your work on the scratch paper provided, and you will record all your answers on the computer screen by using a mouse to fill in the appropriate ovals. You will not be allowed to go back to a previous question, so be sure to answer each question before you attempt to move to the next question.

The Analytical Ability Section generates a score from 200 to 800. Your score will be based on how well you do on questions presented and also on the number of questions you answer. Try to pace yourself so that you have sufficient time to consider every question. If possible, answer all 35 questions in this section. Guess if you need to.

In this book—to assist you in understanding explanations and to direct your attention to different questions and answer choices—each question is given a number, and letters have been placed inside the ovals of the answer choices. **Note that on the actual exam, questions will not have numbers next to them, and no letters appear in the ovals.**

Introduction to Analytical Reasoning

Analytical Reasoning questions are questions based on a set of conditions or statements.

Ability Tested

You will need to understand relationships and draw reasoned conclusions from a set of conditions, rules, or statements.

Basic Skills Necessary

No knowledge of formal logic is required. Familiarity with constructing logical and spatial relationships from a given situation is valuable.

Directions

The general directions are as follows. The following questions or group of questions are based on a passage, chart, or set of statements or conditions. After working the problem, select the correct answer from the five choices given. It may be helpful to draw rough diagrams when you attempt to answer these question types. Use the scratch paper given.

Analysis

Analytical Reasoning sets are composed of conditions followed by 4 or 5 questions. Use only the information presented or implied by the conditions.

Don't bring in more information than is warranted. For example, if a condition states that "Sarah is taller than Andy," don't deduce that, because Sarah is taller than Andy, she is also heavier than Andy (unless such information is also given).

Rely on common sense.

Drawing can help you see the relationships, but keep your drawing simple.

Suggested Approach with Samples

Learn to flow with the information to set up a simple diagram. Use easy-to-understand symbols to help you spot the relationships.

Sample

Questions 1–2

> Seven people are seated in the seven seats in the front row of a theater. All the seats are next to each other, and only one person is in each seat. Each person sits facing toward the screen. The following is known about the positions of the seven people:
>
>   There is a woman at each end of the row.
>   A man is seated in the middle of the group.
>   No man is seated next to another man.
>   The man in the middle is seated between and next to two women.
>   Two other men are also seated between and next to two women.

First, look at how to flow with the information given to make a simple diagram. Start by numbering seven spaces, each next to each other. Remember to practice making your diagrams on scratch paper.

	1	2	3	4	5	6	7

Next, place a woman at each end of the row.

	1	2	3	4	5	6	7
	W						W

Next, place a man in the middle of the group, which is seat 4.

	1	2	3	4	5	6	7
	W			M			W

The next statement says "No man is seated next to another man," so you can mark MM and place it to the side of the diagram as follows:

	1	2	3	4	5	6	7	
	W			M			W	~~MM~~

From the next statement, "The man in the middle is seated between and next to two women," you can fill in as follows:

	1	2	3	4	5	6	7	
	W		W	M	W		W	~~MM~~

And the final statement can help you complete the diagram, placing two more men.

	1	2	3	4	5	6	7	
	W	M	W	M	W	M	W	~~MM~~

Notice that no man is seated next to another man. This chart is complete, but keep in mind that even a partial chart can help more than no chart at all.

Now look at the questions.

---

1. How many women are seated in the front row?

   A. 2

   B. 3

   C. 4

   D. 5

   E. 6

C is correct. The chart clearly shows that four women are in the front row.

> **2.** The man in the middle must have
>
>   **A.** no other men to his right.
>
>   **B.** no women to his left.
>
>   **C.** a man to his right and to his left.
>
>   **D.** other men next to him.
>
>   **E.** no women to his right.

C is correct. By referring to the chart, you can see that the man in the middle has a man to his left and to his right but not next to him.

> **Use *rule breakers* as an effective elimination technique. Rule breakers are statements that break or contradict an initial condition or statement.**

For example, suppose that a set of conditions includes among its statements:

    _____

    Sam is taller than Jim

    _____

    _____

    _____

    _____

From just this piece of information, you could use rule breakers on the following question.

Sample

> **3.** Which of the following is a possible list of children from shortest to tallest?
>
>   **A.** Bob, Jane, Tom, Cal, Sam, Jim
>
>   **B.** Jane, Bob, Jim, Cal, Tom, Sam
>
>   **C.** Bob, Jane, Tom, Sam, Cal, Jim
>
>   **D.** Jim, Bob, Jane, Cal, Sam, Tom
>
>   **E.** Tom, Bob, Cal, Jane, Jim, Sam

Notice that choices **A** and **C** break the rule of the condition that Sam is taller than Jim. And two of the remaining choices **B**, **D**, and **E** will break the rule of one of the other conditions in the problem set (not listed). As you can see, using rule breakers can be an effective technique to quickly knock out incorrect answer choices.

Occasionally a question will be phrased in the negative. For example, "All of the following are possible lists of children, from shortest to tallest, EXCEPT . . ." In this case, the one choice containing the rule breaker will be the correct answer to the question. After you find it, mark that answer on your answer sheet and move to the next question.

Now that you have a few of the basics, look at a few different types of diagrams.

Positional Diagrams involving Linear Order

Samples

Questions 4–9

> Seven automobiles (an Acura, a Buick, a Chevrolet, a Dodge, an Edsel, a Ferrari, and a Jeep) are parked in a parking lot having ten spaces, equally spaced, numbered 1 through 10 from north to south.
>
>   The Acura is as far away from the Buick as the Chevrolet is from the Dodge.
>   The Ferrari is parked next to the Edsel.
>   Space 1 is always filled; spaces 8 and 9 are always empty.

From the initial conditions, you could have set up the following linear display or linear diagram:

```
 North          A B C D E F J
 1 _____
 2              A       C
 3              ?   =   ?
 4              B       D
 5
 6              [ F ]
 7              [ E ]
 8 Empty
 9 Empty
 10
 South
```
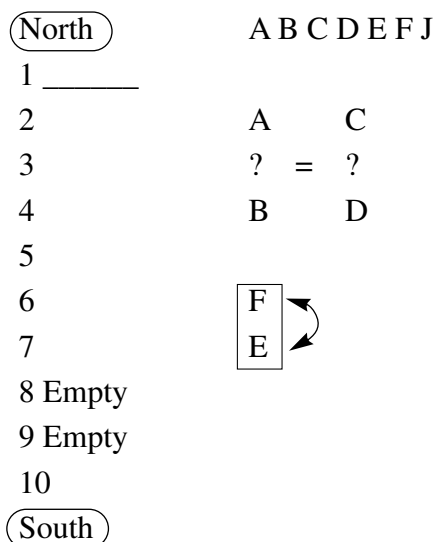
> **4.** If the Jeep is parked in space 1, the Buick is parked in space 5, and the Acura is parked in space 10, which of the following spaces must be empty?
>
> **A.** 1
>
> **B.** 2
>
> **C.** 3
>
> **D.** 4
>
> **E.** 6

E is correct. From the information in Question 4, this diagram can be drawn:

1 Jeep
2
3
4
5 Buick
6
7
8 Empty
9 Empty
10 Acura

The number of spaces between the Acura and the Buick equals the number of spaces between the Chevrolet and Dodge, so the Chevrolet and Dodge must be in spaces 2 and 7. And the Ferrari and the Edsel must then be parked next to each other in spaces 3 and 4, leaving space 6 empty.

1 Jeep
2 Chevrolet/Dodge
3 Edsel/Ferrari
4 Ferrari/Edsel
5 Buick
6
7 Dodge/Chevrolet
8 Empty
9 Empty
10 Acura

> **5.** From north to south, which of the following is a possible order of parked automobiles?
>
> **A.** Dodge, Chevrolet, Ferrari, Edsel, Acura, Buick, Jeep, empty, empty, empty
>
> **B.** Dodge, Ferrari, Chevrolet, Edsel, Acura, Jeep, Buick, empty, empty, empty
>
> **C.** Buick, Dodge, Jeep, Chevrolet, empty, Edsel, Acura, Ferrari, empty, empty
>
> **D.** Chevrolet, Ferrari, Edsel, Acura, Buick, Jeep, empty, Dodge, empty, empty
>
> **E.** Ferrari, Edsel, Dodge, Acura, Buick, Jeep, Chevrolet, empty, empty, empty

A is correct. Choices **B** and **C** do not have the Edsel parked next to the Ferrari. Choices **D** and **E** do not have the same number of spaces between the Acura and Buick as between the Chevrolet and Dodge. Additionally, choices **C** and **D** do not have both the eighth and ninth spaces empty.

> **6.** Assume that the Acura is parked in space 3 and the Buick is parked in space 5. Which of the following could be true?
>
> **A.** The Dodge is parked in space 7.
>
> **B.** The Chevrolet is parked in space 1.
>
> **C.** The Dodge is parked in space 10.
>
> **D.** The Chevrolet is parked in space 6.
>
> **E.** The Chevrolet is parked in space 9.

D is correct. Because the Chevrolet is as far from the Dodge as the Acura is from the Buick (one space between), neither the Chevrolet nor Dodge can be in spaces 1, 7, or 10 (remember, spaces 8 and 9 are empty). But the Chevrolet can be in space 6 if the Dodge is in space 4.

7. If the Acura is parked in space 1, the Ferrari is parked in space 2, and the Chevrolet is parked in space 4, which of the following must be true?

   I. The Buick is parked in space 7.

  II. The Dodge is parked in space 10.

III. The Edsel is parked in space 6.

  A. I only

  B. II only

  C. III only

  D. I and II only

  E. I, II, and III

D is correct. From the information in question 7, this diagram can be drawn:

1 Acura
2 Ferrari
3
4 Chevrolet
5
6
7
8 Empty
9 Empty
10

Because the Edsel must be next to the Ferrari, the Edsel must be in space 3. So option III is incorrect. Since the Acura must be as far from the Buick as the Chevrolet is from the Dodge, the Buick can be only in space 7 and the Dodge in space 10.

8. Suppose that the Jeep, Acura, and Chevrolet are parked in spaces 5, 6, and 7, respectively, and the Buick is parked less than 4 spaces north of the Dodge. Which of the following must be true?

   A. Space 10 is empty.

   B. The Edsel is parked in space 1.

   C. The Ferrari is parked in space 1.

   D. The Dodge is parked in space 4.

   E. The Buick is parked in space 3.

A is correct. Using the information in question 8, a diagram can be drawn:

1

2

3

4

5 Jeep

6 Acura

7 Chevrolet

8 Empty

9 Empty

10

Because the Buick is as far from the Acura as the Dodge is from the Chevrolet, the Buick must be parked in a space immediately before the Dodge. Remembering to leave two spaces together for the Edsel and Ferrari indicates that the Buick and Dodge could be in spaces 1 and 2, respectively, or in spaces 3 and 4, respectively. Whichever way, space 10 will be empty.

9. Which of the following CANNOT be true?

   A. The Ferrari is parked in space 1.

   B. The Edsel is parked in space 10.

   C. The Dodge is parked in space 3.

   D. The Buick is parked in space 2.

   E. The Acura is parked in space 5.

B is correct. The Edsel cannot be parked in space 10, because space 9 is empty and the Edsel is parked next to the Ferrari.

Positional Diagrams involving Circular Order

Samples

Questions 10–12

Five men (Frank, George, Harry, Irving, and Jack) and five women (Karla, Laurie, Marie, Olivia, and Polly) are seated at a round table with eleven seats.

> None of the women are sitting in a seat adjacent to another woman.
> Karla sits between Frank and George, and next to each of them.
> Jack does not sit next to Irving.

From the initial conditions, you could have set up the following circular diagram:

Men	Women
F	K
G	L
H	M
I	O
J	P

F͡KG
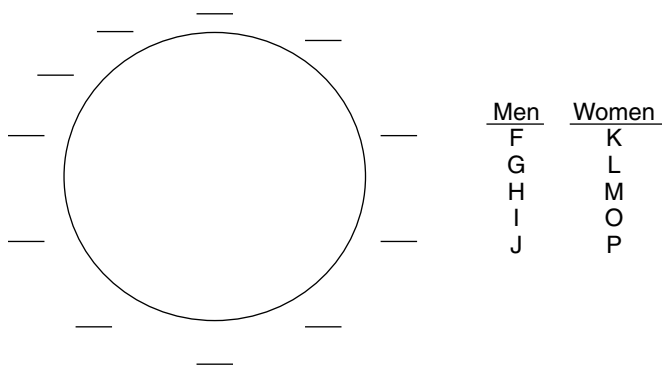
J̷I̷

---

10. Which of the following is a possible seating order around the table?

    A. Empty seat, Frank, Karla, George, Laurie, Olivia, Harry, Irving, Polly, Jack, Marie

    B. Empty seat, Frank, Karla, George, Laurie, Jack, Polly, Olivia, Irving, Marie, Harry

    C. Empty seat, Frank, Karla, George, Laurie, Olivia, Jack, Polly, Irving, Marie, Harry

    D. Empty seat, Olivia, Frank, Karla, George, Laurie, Jack, Irving, Polly, Harry, Marie

    E. Empty seat, Marie, Frank, Karla, George, Laurie, Jack, Polly, Irving, Olivia, Harry
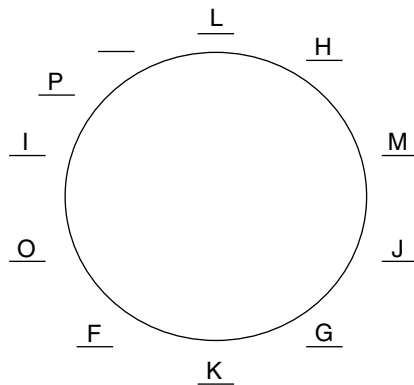

E is correct. Referring to the initial conditions, by using rule breakers you can eliminate choices **A**, **B**, and **C**, as they have two women sitting in adjacent seats.

---

11. If Laurie, Harry, Marie, Jack, and George are seated in that order, which of the following is a correct completion of the seating order after George?

    A. Karla, Frank, Olivia, Irving, Polly, empty seat

    B. Karla, Frank, Irving, Olivia, empty seat, Polly

    C. Frank, Polly, Karla, Irving, Olivia, empty seat

    D. Karla, Frank, Polly, Irving, empty seat, Olivia

    E. Karla, Frank, Olivia, Jack, Polly, Irving

A is correct. The diagram would look like this:

From the answers, choices **B**, **C**, and **D** have two women sitting in adjacent seats and can be eliminated. *Note how the woman at the end of the list is next to Laurie.* Also, choice **C** does not have Karla sitting between George and Frank. Choice **E** has Jack listed a second time with no empty seat.

---

12. If no man is sitting next to another man and all original conditions remain the same, which of the following is a possible seating order?

   A. Laurie, Jack, Marie, Harry, Karla, Frank, Polly, George, Olivia, empty seat, Irving

   B. Laurie, Jack, Marie, empty seat, Karla, Frank, Polly, Irving, George, Olivia, Harry

   C. Laurie, Jack, Marie, empty seat, Harry, Karla, Frank, Polly, Irving, Olivia, George

   D. Laurie, Jack, Marie, George, Karla, Frank, Polly, Irving, Olivia, empty seat, Harry

   E. Laurie, Jack, Marie, Harry, Frank, Karla, George, Polly, Irving, Olivia, empty seat

---

D is correct. From the initial conditions, and the new conditions, you could have eliminated all answers except one. Choices **A**, **B**, and **C** do not have Karla sitting next to both George and Frank. Choice **E** has two men sitting in adjacent seats.

Positional Diagrams involving Days, Dates, or Times

Samples

Questions 13–15

Four stamp dealers (Abby, Baker, Carmen, and David) each attend a different day of a stamp convention, held Thursday through Sunday of one week.

   Carmen attends earlier than Abby.
   David attends later than Baker.

You may want to draw a simple diagram symbolizing the information contained in the conditions. Because you know that Carmen attends earlier than Abby, you may want to put Carmen somewhere to the left of Abby. (Note that "earlier" does not mean exactly one day earlier, but rather "sometime earlier"):

   Thurs   Fri   Sat   Sun   C ? A

And because David attends later than Baker:

Thurs	Fri	Sat	Sun	C ? A
				B ? D

Notice that although no exact days can be determined from the information, you do know that C must be somewhere to the left of A and that B must be somewhere to the left of D. You can, if you wish, eliminate some possibilities as impossible, or rule breakers:

A̸ D̸		B̸ C̸	C ? A
Thurs	Fri	Sat Sun	B ? D

---

13. Which of the following is a possible order of attendance at the convention?

   A. Carmen, David, Abby, and Baker

   B. Baker, Carmen, David, and Abby

   C. David, Carmen, Abby, and Baker

   D. Abby, Baker, David, and Carmen

   E. Abby, Carmen, David, and Baker

B is correct. To solve this problem, look for orders that are *not* possible or rule breakers. You could eliminate choices **D** and **E** because they violate the first condition that "Carmen attends earlier than Abby." Choices **A** and **C** violate the second condition that "David attends later than Baker."

---

14. If Carmen attends the convention on Saturday, who must attend on Thursday?

   A. Abby

   B. Baker

   C. David

   D. Either Abby or David

   E. Either Baker or David

B is correct. Questions that use conditional information (*if, suppose, given that, assume,* and so on) intend that you use that information, but *only* for that particular question. So, for this question only, if Carmen attends on Saturday, Abby must attend on Sunday, because the first condition states that Carmen attends earlier

than Abby. Because David attends later than Baker, of the remaining two days, Baker must attend on Thursday, and David must attend on Friday. Now that you have used the conditional information included in that question, return to the information contained only in the original conditions. (Disregard the information added in the preceding question.)

Your diagram could have looked like this:

Thurs	Fri	Sat	Sun		C ? A
B	D	C	A		B ? D

---

15. Each of the following is possible EXCEPT

   A. Baker attends the convention on Thursday.

   B. Carmen attends the convention on Thursday.

   C. Abby attends the convention on Sunday.

   D. David attends the convention on Saturday.

   E. Baker attends the convention on Sunday.

E is correct. Again, use rule breakers to answer this question, but when you find the rule breaker, you have the right answer. Because David attends later than Baker, Baker cannot attend the convention on Sunday.

Groups

Samples

Questions 16–18

Five people are to serve on a committee to choose a new school principal. W, X, Y, and Z are teachers. S, T, U, and R are parents. The committee must have at least two parents and at least two teachers. The committee must conform to the following conditions:

   If either W or X serves on the committee, Z will not serve on the committee.

   If S serves on the committee, U will not serve on the committee.

   If U serves on the committee, R must serve on the committee.

Look for similarities and differences to help you make your groups. Also consider using lines and other marks to connect people or items that can or cannot be together.

From the information given in the conditions, you can draw the following diagram to help you answer the questions:

---
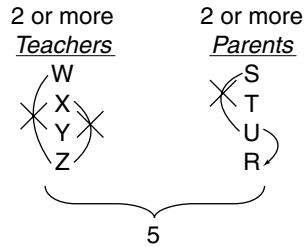
16. If Z serves on the committee, which of the following must also serve on the committee?

   I. S

  II. U

 III. Y

  A. I only

  B. II only

  C. III only

  D. I and II only

  E. I, II, and III

C is correct. If Z serves on the committee, that eliminates W and X from serving, which leaves Y to serve as the second teacher on the committee.
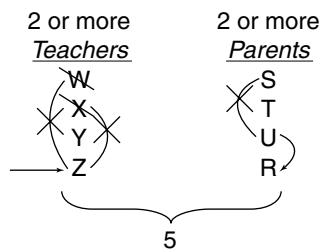
**17.** Which of the following groups could serve as members of the committee?

    A.   S, U, R, W, X

    B.   S, U, W, X, Y

    C.   S, R, W, X, Y

    D.   S, R, W, X, Z

    E.   S, T, R, X, Z

C is correct. Choices **A** and **B** violate the second condition, "If S serves on the committee, U will not serve on the committee." Choices **D** and **E** violate the first condition, "If either W or X serves on the committee, Z will not serve on the committee." This answer could have been more easily spotted by looking at the display.

18. If Z is chosen to serve on the committee, each of the following lists could comprise the other committee members EXCEPT

    I. Y, S, T, R

    II. Y, S, U, R

    III. Y, T, U, R

    A. I only

    B. II only

    C. III only

    D. I and III only

    E. I, II, and III

B is correct. Option II contains S with U, which is a violation of the second condition. Because the question is phrased in the negative (EXCEPT), choice **B** is the correct choice.
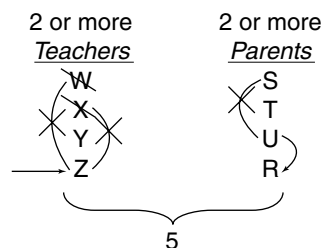
Relative Size/Number Diagrams
(Greater Than/Less Than, Taller/Shorter and so on)

Samples

Questions 19–24

> Results were posted in 1975 and 1990 for 8 dental patients: Quincy, Sonntag, Tav, Ulmer, Vinton, Waud, Yu, and Zimino.
>
> > In 1975, Ulmer's cavities outnumbered Vinton's cavities and outnumbered Yu's cavities; in 1990, Vinton's cavities outnumbered Zimino's cavities and outnumbered Tav's cavities.
> >
> > In 1975, Zimino's cavities outnumbered Tav's cavities; in 1990, Zimino's cavities outnumbered Waud's cavities.
> >
> > In 1975, Yu's cavities outnumbered Sonntag's cavities; in 1990, Waud's cavities outnumbered Yu's cavities.
> >
> > In 1975, Waud's cavities outnumbered Ulmer's cavities and outnumbered Zimino's cavities; in 1990, Tav's cavities outnumbered Sonntag's cavities and outnumbered Ulmer's cavities.

Using the information in the conditions, the following charts could be drawn:
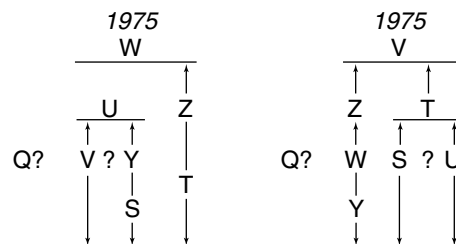
> **19.** Of the following, who could NOT have had the fewest number of cavities in either year, 1975 or 1990?
>
> **A.** Tav
>
> **B.** Ulmer
>
> **C.** Vinton
>
> **D.** Yu
>
> **E.** Zimino

E is correct. In 1975, Zimino's cavities outnumbered Tav's; in 1990, Zimino's cavities outnumbered Waud's. Therefore, Zimino could not have had the fewest number of cavities in either of those years.

20. A complete and accurate listing of those who could have had the fourth lowest number of cavities in 1990 would include

    A. Quincy, Sonntag, and Waud.

    B. Quincy, Sonntag, Ulmer, and Waud.

    C. Quincy, Sonntag, Tav, Ulmer, and Waud.

    D. Quincy, Sonntag, Ulmer, Waud, Yu, and Zimino.

    E. Quincy, Sonntag, Tav, Ulmer, Waud, Yu, and Zimino.

E is correct. Because Quincy and Sonntag are in each of the choices, you do not need to consider them. Only Vinton, who is highest or second highest (if Quincy was highest) could not be the fourth lowest in 1990.

21. Ulmer's number of cavities must have been greater than Yu's in 1990 if, in 1990,

    A. Quincy had more cavities than Waud.

    B. Waud had more cavities than Sonntag.

    C. Tav had more cavities than Waud.

    D. Waud had more cavities than Ulmer.

    E. Ulmer had more cavities than Waud.

E is correct. If Ulmer had more cavities than Waud, then Ulmer must also have more cavities than Yu.

22. Which of the following must be true?

    I. Waud's cavities in 1975 and 1990 outnumbered Ulmer's cavities in those years.

    II. Waud's cavities in 1975 and 1990 outnumbered Yu's cavities in those years.

    III. Quincy's cavities in 1975 and 1990 outnumbered Sonntag's cavities in those years.

    A. I only

    B. II only

    C. III only

    D. I and II only

    E. I, II, and III

B is correct. The only definitive information in both years can be drawn between Waud and Yu. Waud had more cavities than Yu in both 1975 and 1990.

---

23. Suppose that each patient's cavities are totaled for the two years, 1975 and 1990. Which must be true?

A. Waud's total cavities are more than Quincy's total.

B. Ulmer's total cavities are more than Sonntag's total.

C. Tav's total cavities are more than Sonntag's total.

D. Waud's total cavities are more than Yu's total.

E. Zimino's total cavities are more than Yu's total.

D is correct. Only Waud's cavities definitely outnumbered Yu's cavities in each of the years; therefore, Waud's total must be greater than Yu's.

---

24. Disregarding Quincy, suppose that three patients had the same number for the fewest cavities in 1975, and three patients had the same number for the fewest cavities in 1990. Who must have had the fewest total cavities in 1975 and 1990 combined?

A. Sonntag

B. Tav

C. Ulmer

D. Vinton

E. Yu

A is correct. Disregarding Quincy, if three patients had the same number of fewest cavities in 1975, those three patients must have been Vinton, Sonntag, and Tav, since those are the only three who could be tied with the fewest number in that year. Disregarding Quincy, if three patients had the same number of fewest cavities in 1990, those patients must have been Yu, Sonntag, and Ulmer. Since Sonntag is the only patient who had fewest in both years, Sonntag must have had the fewest total cavities in both years.

Game Rules

Samples

Questions 25–31

> A gambler enters a wagering game consisting of four rounds of betting (Deals 1, 2, 3, and 4) in which coins and currency are bet. The gambler has the following coins and currency: 1 silver-dollar coin $, 2 half-dollar coins H, 4 quarters Q, and 1 dollar bill D. The following is observed:
>
> The gambler bets exactly $1.00 during each deal.
>
> The silver dollar is bet before Deal 3.
>
> Two quarters begin the betting of the deal immediately after the deal in which the silver dollar is bet.
>
> The dollar bill is not bet prior to betting any coin.

From the information given, you could have constructed the following display:

Deal 1   Deal 2   Deal 3   Deal 4

$(?) $(?)   D

$\boxed{\$}\boxed{QQ}$

Notice that the dollar bill must be the bet in Deal 4, since the bill cannot be bet prior to any coin. Also notice that the silver dollar must be bet in either Deal 1 or Deal 2, since the silver dollar is bet before Deal 3.

---

25. Suppose that the silver dollar is NOT bet in Deal 2. Which of the following is NOT a sequence of betting for Deals 2 and 3?

	Deal 2	Deal 3
A.	Q Q H	H Q Q
B.	Q Q H	Q H Q
C.	Q Q H	Q Q H
D.	Q Q Q Q	H H
E.	Q H Q	H Q Q

E is correct. If the silver dollar is not bet in Deal 2, it must be bet in Deal 1 in order to be bet before Deal 3. Because the silver dollar is bet in Deal 1, Deal 2 must begin with a bet of two quarters. Only choice **E** does not begin Deal 2 with a bet of two quarters and is therefore the correct answer.

26. Suppose a quarter is the last bet before the silver dollar is bet. Which of the following is a possible sequence of betting for the first three deals?

	Deal 1	Deal 2	Deal 3
A.	H H	Q Q Q Q	$
B.	H Q Q	$	Q Q H
C.	Q H Q	$	Q H Q
D.	Q H Q	$	H Q Q
E.	H Q Q	H Q Q	$

B is correct. If a quarter is the last bet before the silver dollar is bet, then the silver dollar is bet in Deal 2 and must be followed in the next deal (Deal 3) by two quarters. This is choice **B**.

27. Suppose two of the deals each end with a bet of the same denomination coin. Which of the following must be true?

   A. The two deals are Deal 2 and Deal 3.

   B. The two deals are Deal 1 and Deal 3.

   C. The two deals are Deal 1 and Deal 2.

   D. The two deals end with half-dollar bets.

   E. The two deals end with quarter bets.

D is correct. Since the silver dollar is bet before Deal 3, it is bet in either Deal 1 or Deal 2. Therefore, two quarters will be bet at the beginning of Deal 2 or Deal 3:

Deal 1	Deal 2	Deal 3	Deal 4
$	Q Q		D

or

Deal 1	Deal 2	Deal 3	Deal 4
	$	Q Q	D

Because two quarters are initiating either Deal 2 or Deal 3, a quarter cannot end each of two deals (and still have the bets in each deal equal $1.00). Therefore, the two deals each ending with a bet of the same denomination coin must end with half-dollars:

Deal 1	Deal 2	Deal 3	Deal 4
$	Q Q H	Q Q H	D

or

Deal 1	Deal 2	Deal 3	Deal 4
Q Q H	$	Q Q H	D

28. Which of the following is a possible betting sequence?

	Deal 1	Deal 2	Deal 3	Deal 4
A.	$	Q Q H	Q H Q	D
B.	$	H Q Q	Q Q H	D
C.	H H	$	Q Q H	D
D.	Q H Q	$	Q H Q	D
E.	H Q Q	Q Q H	Q H Q	D

A is correct. Only **A** is possible. In choices **B** and **D**, quarters do not immediately follow the silver-dollar bet. In **C**, there are too many half-dollars and not enough quarters; in **E**, there are too many half-dollars and quarters and no silver dollar.

29. Assume that the betting sequence in Deal 3 is exactly the same as in Deal 2. Which of the following CANNOT be true?

   I. Deals 2 and 3 each end with a quarter bet.

  II. Deals 2 and 3 each begin with a half-dollar bet.

 III. Deals 2 and 3 each begin with a quarter bet.

  A. I only

  B. II only

  C. III only

  D. I and II only

  E. II and III only

D is correct. I and II only cannot be true. If the betting sequence in Deal 2 and Deal 3 are the same, the silver dollar is bet in Deal 1. That requires Deal 2 to begin with two quarters, and so the same is true with Deal 3.

30. The betting sequence of "quarter then half-dollar then quarter" CANNOT appear in which of the following deals?

   I. Deal 1

  II. Deal 2

 III. Deal 3

 IV. Deal 4

A. II and IV only

B. III only

C. I, II, and IV only

D. II, III, and IV only

E. I, II, III, and IV

A, II and IV only. The betting sequence of "quarter then half-dollar then quarter" cannot happen in Deal 4, which must be the dollar bill. Also "quarter then half-dollar then quarter" cannot happen in Deal 2, because then the silver dollar must be bet in Deal 1 and would then not be immediately followed by a bet of two quarters.

31. If the gambler exchanges one of the half-dollars for two quarters, which of the following is not a possible sequence of betting?

	Deal 1	Deal 2	Deal 3	Deal 4
A.	$	Q Q Q Q	H H Q	D
B.	D	H Q Q	Q Q Q Q	$
C.	H Q Q	$	Q Q Q Q	D
D.	H H Q	$	Q Q Q Q	D
E.	Q Q Q Q	H Q	$ Q	D

C is correct. If one half-dollar is exchanged for two quarters, choice **C** is possible. Choices **A** and **D** still contain two half-dollars (and also total more than $1.00 in a single deal), **B** has the dollar bill bet prior to a coin, and **E** does not follow the silver dollar with a bet of two quarters.

Some Analytical Reasoning problems are variations of the types illustrated thus far. These variations occur in the practice tests in this book and are fully explained in the answers section. *Review them carefully.*

A PATTERNED PLAN OF ATTACK

Read given information CAREFULLY.

↓

Focus on important information.

↓

Use only the information presented or implied by the conditions.

↓

Learn to flow with the information to set up a SIMPLE diagram on your scratch paper.

↓

Use easy-to-understand symbols or abbreviations to help you spot the relationships in your diagram.

↓

Quickly fill in as much of the chart or diagram as possible. Then start the questions.

↓

Don't spend excessive time trying to complete or fill in the chart or diagram. It may not be possible or necessary.

↓

Use rule breakers as an effective elimination technique.

↓

Be familiar with some of the common types of diagrams.

Practice Analytical Reasoning Questions

Set 1

Questions 1–3

Six musical songs play on a tape during lunch hour at a department store. The songs' performing artists are Sinatra, Joel, Rankin, Holiday, Cole, and McCartney, not necessarily in that order.

Holiday's song is immediately before McCartney's song.

Sinatra's song is immediately after the song sung by Rankin.

Cole's song is neither first nor second on the tape.

Joel's song comes exactly three songs after Cole's song.

1. If a customer enters the store as Holiday's song is ending, stays only through the next song, and then leaves as Cole's song begins playing, which of the following must be true?

    A. Holiday's song is first on the tape.

    B. McCartney's song is third on the tape.

    C. Cole's song is fourth on the tape.

    D. Rankin's song is fifth on the tape.

    E. Sinatra's song is sixth on the tape.

2. If Rankin's song is first on the tape, which of the following performers' songs must be playing immediately before Cole's?

    A. Holiday

    B. McCartney

    C. Rankin

    D. Sinatra

    E. Joel

3. If Sinatra's song is fifth on the tape, which of the following performers' songs must be playing immediately before Cole's?

    A. Holiday

    B. McCartney

    C. Rankin

    D. Sinatra

    E. Joel

Set 2

Questions 4–9

Ten students — Arnold, Brad, Charlotte, Danielle, Evan, Francine, Gabrielle, Hap, Ida, and Joshua — each choose one classroom assignment. There are four assignments from which to choose: Room Cleanup, Designing Bulletin Boards, Publishing the Class Newspaper, and Arranging Desks.

    The Bulletin Boards group has one less student than the Room Cleanup group.

    Arnold, Brad, and Charlotte do not join the Room Cleanup crew, individually or as a group.

None of the students joins the Arranging Desks group.

Danielle, Evan, and Francine do not design Bulletin Boards, individually or as a group.

Gabrielle, Hap, and Ida do not join the Newspaper staff, individually or as a group.

Joshua joins the Newspaper staff.

4. Which of the following is a list of students who could comprise the entire Newspaper staff?

   A. Joshua, Brad, and Gabrielle

   B. Joshua, Charlotte, and Francine

   C. Joshua, Danielle, Evan, and Francine

   D. Joshua, Brad, Charlotte, and Danielle

   E. Joshua, Arnold, Charlotte, Francine, and Ida

5. Of those listed, which is the largest possible number of students who could serve on the Newspaper staff?

   A. 6

   B. 7

   C. 8

   D. 9

   E. 10

6. If no other student except Ida is designing Bulletin Boards, which of the following students must have chosen Room Cleanup?

   A. Danielle and Hap

   B. Francine and Evan

   C. Evan and Gabrielle

   D. Hap and Francine

   E. Gabrielle and Hap

7. If the Newspaper staff has one member, who of the following must have chosen Room Cleanup?

   A. Arnold

   B. Brad

   C. Gabrielle

   D. Danielle

   E. Hap

8. If Gabrielle, Hap, and Charlotte are the only students designing Bulletin Boards, which three must be the only students who joined the newspaper staff?

   A. Arnold, Brad, and Joshua

   B. Arnold, Danielle, and Joshua

   C. Brad, Evan, and Joshua

   D. Brad, Francine, and Joshua

   E. Charlotte, Evan, and Joshua

9. If Arnold and Gabrielle are the only students designing Bulletin Boards, how many students must be publishing the Newspaper?

   A. 2

   B. 3

   C. 4

   D. 5

   E. 6

Set 3

Questions 10–15

Eight seats face the stage of a small theater. Four seats (A1, A2, A3, and A4, in that order) are in row A, the first row from the stage. The four seats in row B (B1, B2, B3, and B4, in that order) are immediately behind row A. Six theater patrons attend the play, each sitting in a seat. The following is known about the seating arrangement:

> Erkel sits exactly in front of Cabot.
> Seat A2 is always empty.
> Davis does not sit next to Forge.
> Gabron sits in seat A4.
> Harris does not sit in seat B4.

10. If Davis sits in seat B3, then Forge must sit in seat

    A. B1.

    B. B2.

    C. B4.

    D. A1.

    E. A3.

11. Suppose that Harris and Erkel are sitting in seats A1 and A3, respectively, then it CANNOT be true that seat

    A. B1 is empty.

    B. B2 is empty.

    C. B4 is empty.

    D. B3 is occupied by Cabot.

    E. B1 is occupied by Davis.

12. Which patrons must be in the same row no matter what the seating arrangement?

    A. Cabot and Forge

    B. Forge and Davis

    C. Harris and Erkel

    D. Gabron and Davis

    E. Gabron and Erkel

13. If Harris sits next to Gabron, which of the following CANNOT be true?

    A. Davis sits in B2.

    B. Davis sits in B3.

    C. Forge sits in B4.

    D. Forge sits in B2.

    E. Cabot sits in B1.

14. If Cabot sits next to Harris, then Harris must sit in

    A. B1.

    B. B2.

    C. B3.

    D. B4.

    E. Row A.

15. If Forge sits in B3, then

    A. Cabot must sit in A1.

    B. Gabron must sit in B4.

    C. Davis must sit in A3.

    D. Harris must sit in A2.

    E. Harris must sit in A3.

Set 4

Questions 16–21

Six films (*Quest to Hope, Rats, Sam, Terror, Victory,* and *Wellfleet*) are scheduled to be screened at a film festival. No more than two films may be screened during one day, but all the films will be screened exactly once during the festival held Wednesday through Sunday. The screening schedule adheres to these parameters:

    The producers of *Terror* will not allow it to be screened anytime prior to the screening of *Victory.*

    Rats and *Sam* are complimentary shorts and are to be screened the same day.

    Quest to Hope and *Wellfleet* are both black-and-white films and should not be screened the same day.

16. If *Victory* and *Terror* are screened the same day, which of the following must be true about the film festival schedule if it conforms to its parameters?

    A. *Quest to Hope* and *Wellfleet* will be screened the same day.

    B. *Victory* cannot be screened on Sunday.

    C. *Sam* and *Rats* will not be screened the same day.

    D. Exactly one day of the schedule will not have any film screening.

    E. Each day of the schedule will have at least one film screening.

17. Each of the following schedules are in accordance with festival parameters EXCEPT

	Wednesday	Thursday	Friday	Saturday	Sunday
A.	*Victory*	*Quest to Hope*	*Sam/Rats*	*Terror*	*Wellfleet*
B.	*Wellfleet*	*Sam/Rats*	*Victory*	*Quest to Hope*	*Terror*
C.	*Quest to Hope*	*Rats/Sam*	*Wellfleet*	*Victory/Terror*	
D.	*Wellfleet*	*Terror*	*Quest to Hope*	*Victory*	*Rats/Sam*
E.	*Victory/Terror*		*Quest to Hope*	*Sam/Rats*	*Wellfleet*

18. All of the following conform to the parameters of the schedule EXCEPT

    A. *Sam* and *Wellfleet* are both screened on Friday.

    B. *Wellfleet* and *Terror* are both screened on Thursday.

    C. *Victory* and *Wellfleet* are both screened on Saturday.

    D. *Quest to Hope* is not screened on Friday.

    E. *Rats* is not screened on Saturday.

19. If *Quest to Hope, Rats,* and *Terror* are scheduled for Wednesday, Thursday, and Friday, respectively, and if the schedule conforms to the parameters, then it must be true that

    A. *Victory* is screened on Wednesday.

    B. *Victory* is not screened on Friday.

    C. *Wellfleet* is screened on Friday.

    D. *Wellfleet* is screened on Wednesday.

    E. *Victory* is not screened on Saturday.

20. If *Victory* is screened on Sunday, then which of the following would NOT conform to the parameters of the schedule?

    A. *Wellfleet* is screened on Wednesday.

    B. *Rats* is screened on Wednesday.

    C. *Quest to Hope* is screened on Friday.

    D. *Terror* is screened on Friday.

    E. No film is screened on Thursday.

21. If *Wellfleet* is screened on Thursday and the schedule conforms to its parameters, which of the following could be true?

    A. *Sam* is screened on Thursday.

    B. *Quest to Hope* is screened on Thursday.

    C. *Rats* is screened on Thursday.

    D. *Rats* and *Terror* are screened on Friday.

    E. *Victory* and *Terror* are screened on Friday.

Set 5

Questions 22–27

Six actors (Al, Brandon, Charlie, Dusty, Earvin, and Francine) perform scenes at a showcase talent presentation. Every scene has four characters except scenes one and three, which have three characters each.

    Each character is played by one of the actors.

    There are five scenes.

    During each scene, the actors not performing work the lights.

    Each actor performs in three scenes, but the three scenes cannot be consecutive.

    Each actor works lights for exactly two scenes, but they cannot be consecutive.

22. Assume that Charlie and Earvin work lights during scene 1. Which of the following must be true?

    A. Earvin and Charlie perform in scene 5.

    B. Earvin and Dusty perform in scene 4.

    C. Earvin and Charlie perform in scene 4.

    D. Earvin performs in scenes 3 and 4.

    E. Charlie performs in scenes 3 and 4.

23. If Brandon, Charlie, and Francine perform in scene 1, which of the following groups could perform in scene 2?

    A. Brandon, Charlie, Dusty, and Francine

    B. Al, Brandon, Charlie, and Francine

    C. Al, Charlie, Dusty, and Francine

    D. Al, Dusty, Earvin, and Francine

    E. Charlie, Dusty, Earvin, and Francine

24. Assume that Al, Brandon, and Dusty perform in scene 1. If Brandon, Dusty, and Earvin perform in scene 3, any of the following could perform in scene 4 EXCEPT

    A. Al

    B. Brandon

    C. Charlie

    D. Dusty

    E. Earvin

25. Suppose that Brandon and Dusty perform in scene 4, and Al, Dusty, and Earvin perform in scene 1. Each of the following could perform in scene 3 EXCEPT

    A. Al

    B. Brandon

    C. Charlie

    D. Francine

    E. Earvin

26. Suppose that Brandon, Charlie, and Dusty perform in scene 1. If Al, Charlie, and Dusty perform in scene 3, the actors performing scene 2 must be

    A. Al, Brandon, Charlie, and Francine.

    B. Al, Brandon, Dusty, and Francine.

    C. Al, Brandon, Earvin, and Francine.

    D. Brandon, Charlie, Earvin, and Francine.

    E. Brandon, Dusty, Earvin, and Francine.

27. Assume that Al, Charlie, and Dusty perform in scene 1. If Dusty is included in the performers for scene 2, who must perform in scene 4?

A. Al

B. Brandon

C. Charlie

D. Dusty

E. Francine

Set 6

Questions 28–32

Each player of a six-member team (Ali, Berti, Cap, Dani, Evan, and Fran) carries the ball and then passes it to another player. On one play, each member carried the ball exactly once. The following is true about that one play:

 Cap passed the ball to Fran.
 Berti received the ball from Ali.
 Fran carried the ball after Evan carried it.
 Dani carried the ball before Ali.

28. Which of the following could be the order in which the players carried the ball?

A. Evan, Dani, Ali, Cap, Fran, Berti

B. Evan, Dani, Cap, Fran, Ali, Berti

C. Cap, Fran, Evan, Dani, Ali, Berti

D. Ali, Berti, Evan, Dani, Cap, Fran

E. Evan, Fran, Cap, Dani, Ali, Berti

29. If Dani carried the ball second, who must have carried the ball first?

A. Ali

B. Berti

C. Cap

D. Fran

E. Evan

30. If Berti carried the ball fourth, which of the following must be true?

    A. Evan passed the ball to Cap.

    B. Evan passed the ball to Dani.

    C. Dani passed the ball to Evan.

    D. Berti passed the ball to Cap.

    E. Dani passed the ball to Ali.

31. Which of the players could NOT have carried the ball second?

    I. Dani

    II. Berti

    III. Cap

    A. I only

    B. II only

    C. III only

    D. I and II only

    E. I, II, and III

32. If Berti passed the ball to Evan, all of the following must be true EXCEPT

    A. Fran carried the ball sixth.

    B. Dani carried the ball second.

    C. Cap carried the ball fifth.

    D. Dani passed the ball to Ali.

    E. Evan passed the ball to Cap.

Answers and Explanations for Practice Problems

Set 1

From the information given for questions 1–3, you can draw the following chart:

	C			J	RS
1	2	3	4	5	6	HM
¢	¢				

1. **A.** If the customer enters as Holiday's song is playing, stays through one song, and then hears Cole's song, because Cole's song is third, Holiday's song must be first.

2. **D.** If Rankin's song is first, Sinatra's must be second, and Holiday and McCartney must be fourth and fifth respectively, with Joel last.

3. **B.** If Sinatra's song is fifth, then Rankin's is fourth, leaving Holiday/McCartney as first/second.

Set 2

From the information given for questions 4–9, you can draw the following diagram:

1 less than RC

Bulletin Boards	Room Cleanup	Newspaper	Arranging Desks
Ð Ɇ F̸	A̸ B̸ C̸	G̸ H̸ I̸ J	

4. **B.** Choices **A** and **E** are not possible because neither Gabrielle nor Ida join the Newspaper staff. Of the remaining choices, **C** and **D** are not possible because they each comprise four students, leaving six students for both Room Cleanup and Bulletin Boards. With six students, it is not possible for Bulletin Boards to have one less student than Room Cleanup.

5. **B.** The largest possible number of students on the Newspaper staff are all but Gabrielle, Hap, and Ida — seven — which leaves two for Room Cleanup and one for Bulletin Boards.

6. **E.** If only Ida designs Bulletin Boards, then Gabrielle and Hap must have chosen Room Cleanup, because they didn't join the Newspaper staff.

7. **D.** If only one student joined the Newspaper staff, that student was Joshua. Therefore, Danielle, Evan, and Francine, because they do not design Bulletin Boards, must have chosen Room Cleanup.

8. **A.** If Gabrielle, Hap, and Charlotte are the only students designing Bulletin Boards, because Arnold and Brad do not join the Room Cleanup crew, Arnold, Brad, and Joshua must be on the Newspaper.

9. **D.** If Arnold and Gabrielle are the only students designing Bulletin Boards, and Bulletin Boards has one less than Room Cleanup, three students must be on Room Cleanup. That leaves five students publishing the newspaper.

Set 3

From the information given for questions 10–15, you can draw this diagram:

	B1	B2	B3	B4
C				H̶
E	A1	A2	A3	A4
		empty		G

D∗F
F∗D

10. **E.** If Davis sits in B3, seats A1 and B1 are the only seats remaining where Erkel can sit directly in front of Cabot. Therefore, because Forge cannot sit next to Davis, the only seat left for Forge is A3.

11. **C.** If Harris and Erkel occupy A1 and A3, respectively, then Cabot must occupy B3. The diagram now looks like this:

B1	B2	B3	B4
		C	
A1	A2	A3	A4
H	empty	E	G

Because Davis cannot sit next to Forge, one of them must occupy seat B4.

12. **E.** Because Erkel sits directly in front of Cabot, Erkel must sit in row A. Gabron sits in A4, also in row A.

13. **B.** If Harris sits next to Gabron, Erkel and Cabot must sit in A1 and B1, respectively:

B1	B2	B3	B4
C			
A1	A2	A3	A4
E	empty	H	G

Because Forge does not sit next to Davis, seat B3 must be empty.

14. **B.** Cabot will be sitting in either B1 or B3. If Cabot is in B1, then Harris must sit in B2. If Cabot is in B3, Harris can sit only in B2, since Harris does not sit in B4.

15. **C.** If Forge sits in B3, the diagram looks like this:

B1	B2	B3	B4
		F	

A1	A2	A3	A4
	empty		G

Now Erkel and Cabot must sit in A1 and B1, respectively:

B1	B2	B3	B4
C		F	

A1	A2	A3	A4
E	empty		G

Set 4

From the information for questions 16–21, you could draw these simple notes:

RS or SR   QW̸   V . . . T

16. **D.** If *Victory* and *Terror* are screened the same day (obviously *Victory* first, because *Terror* cannot be screened prior to *Victory*), and if *Rats* and *Sam* are screened the same day according to the parameters of the schedule, that leaves two films (*Quest to Hope* and *Wellfleet*) to be screened over the remaining three days. Because these two films cannot be screened on the same day, exactly one day will have no film screening.

17. **D.** *Terror* cannot be screened prior to *Victory*'s screening.

18. **A.** If *Sam* is screened on Friday, then *Rats* must also be screened on Friday, because *Sam* and *Rats* are to be screened the same day. So if *Wellfleet* is also screened on Friday, that would mean three films are screened the same day, which does not conform to the parameters of the schedule.

19. **E.** *Victory* cannot be screened on Saturday, because it must be screened prior to *Terror*.

20. D. If *Victory* is screened on Sunday, it must be the first of two films screened that day, because *Terror* must be screened after it.

21. E. *Victory* and *Terror* can both be screened the same day if *Victory* is shown first.

Set 5

From the initial conditions, you could have drawn the following diagram:

A B C D E F

1 ___ ___ ___
2 ___ ___ ___ ___
3 ___ ___ ___
4 ___ ___ ___ ___
5 ___ ___ ___ ___

22. A. If Charlie and Earvin work lights during scene 1, they both perform in scene 2. Because every actor performs in a total of three scenes (but not consecutive), Charlie and Earvin will each be in scenes 2, 3, and 5 or in scenes 2, 4, and 5. So they both will definitely be together in scene 5.

23. D. Using the information in question 23,

1 B   D   F
2 ___ ___ ___ ___
3 ___ ___ ___
4 ___ ___ ___ ___
5 ___ ___ ___ ___

If Brandon, Charlie, and Francine perform in scene 1, then Al, Dusty, and Earvin work lights during scene 1. Therefore Al, Dusty, and Earvin must perform in scene 2, because they cannot work lights in two consecutive scenes. Only choice **D** includes Al, Dusty, and Earvin.

24. E. From the information in question 24, you can draw this diagram:

1 A   B   D
2 ___ ___ ___ ___
3 B   D   E
4 ___ ___ ___ ___
5 ___ ___ ___ ___

Because Charlie, Earvin, and Francine worked lights during scene 1, they must perform in scene 2, and since Al does not perform in scene 3, he also must perform in scene 2.

```
1 A    B    D
2 C    E    F    A
3 B    D    E
4 ___  ___  ___  ___
5 ___  ___  ___  ___
```

So you know that Earvin performs in scenes 2 and 3. Because he cannot perform in a third consecutive scene, he cannot perform in scene 4.

25. B. From the information in question 25, you can draw this diagram:

```
1 A    D    E
2 ___  ___  ___  ___
3 ___  ___  ___
4 B    D    ___  ___
5 ___  ___  ___  ___
```

Because Brandon, Charlie, and Francine worked lights during scene 1, they must perform in scene 3:

```
1 A    B    E
2 B    C    F    ___
3 ___  ___  ___
4 B    D    ___  ___
5 ___  ___  ___  ___
```

Because Brandon performs in both scene 2 and scene 4, he cannot perform in scene 3.

26. C. From the information in question 26, you can draw this diagram:

```
1 B    C    D
2 ___  ___  ___  ___
3 A    C    D
4 ___  ___  ___  ___
5 ___  ___  ___  ___
```

Because Al, Earvin, and Francine worked lights during scene 1, they must appear in scene 2:

```
1 B    C    D
2 A    E    F    ___
3 A    C    D
4 ___  ___  ___  ___
5 ___  ___  ___  ___
```

Because Charlie and Dusty perform in scenes 1 and 3, neither of them can perform in scene 2. That leaves Brandon as the final performer in scene 2.

27. D. From the information in question 27, you can draw this diagram:

```
1 A   C   D
2 ___ ___ ___   D
3 ___ ___ ___
4 ___ ___ ___ ___
5 ___ ___ ___ ___
```

Because Brandon, Earvin, and Francine work lights in scene 1, they must perform in scene 2:

```
1 A   C   D
2 B   E   F   D
3 ___ ___ ___
4 ___ ___ ___ ___
5 ___ ___ ___ ___
```

Because Dusty cannot perform in three consecutive scenes, Dusty must work lights for scene 3 and then must perform again in scene 4.

Set 6

From the information for questions 28–32, you can draw these notes:

```
E . . . CF
D . . . AB
1   2   3   4   5   6
—   —   —   —   —   —
```

28. B. In **A**, Berti does not receive the ball from Ali. In **C**, Fran does not carry the ball after Evan. In **D**, Dani does not carry the ball before Ali. In **E**, Cap does not pass the ball to Fran.

29. E. If Dani carried the ball second, that leaves only Evan to carry the ball first.

30. D. If Berti carried the ball fourth, then Cap and Fran must have carried the ball fifth and sixth.

31. B. II only. Berti could not have been second because both Dani and Ali must carry the ball before Berti.

32. B. If Berti passed the ball to Evan, then the order of carrying the ball must be D, A, B, E, C, F.

INTRODUCTION TO LOGICAL REASONING

The Analytical Ability section usually includes approximately nine logical reasoning questions.

Ability Tested

These questions test your ability to read and understand the logic presented in brief passages, statements, or conversations.

Basic Skills Necessary

Candidates who read critically and understand simple logic and reasoning do well on these questions. The ability to isolate the key point and to be able to identify supporting, weakening, and irrelevant issues is important.

Directions

The general directions are as follows: The following questions or group of questions are based on a passage or set of statements. Choose the best answer for each question and blacken the corresponding space on your answer sheet. It may be helpful to draw round diagrams or simple charts when you attempt to answer these types of questions.

Analysis

- As you read the brief passage, you must follow the line of reasoning using only common-sense standards of logic. No knowledge of formal logic is required. Then you must choose the best answer, realizing that several choices may be possible, but only one will be best.

- Rely on common sense. No special expertise is necessary.

- Use only what is presented or implied by the passage. Do not make large leaps in logic in order to arrive at an answer choice. Don't read in what isn't there.

- Choose the best answer choice. The test makers strongly imply that each question may have more than one good answer.

Suggested Approach with Samples

Preread the question following the passage.

In most instances, each brief passage will be followed by one question. For these one-question passages, it may be time-effective to read the question before reading the passage. Many GRE candidates have found that prereading the question eliminates having to read the passage a second time while searching for the answer, thus saving valuable minutes. Knowing what the question is before reading the passage enables you to focus on those elements of the passage essential to the question.

Some candidates report that they can effectively preread a question. If you decide to do so, *do not* preread the answer choices. Because four of the five choices are incorrect, scanning them introduces material 80 percent of which is irrelevant and/or inconsistent and therefore incorrect. Prereading the answer choices is a waste of time and energy. Practice can help you determine when prereading is effective for you.

Try reading the *question* about the following passage first; then read the passage:

Sample

That seniors in the inner cities have inadequate health care available to them is intolerable. The medical facilities in the urban ghetto rarely contain basic medical supplies, and the technology in these hospitals is reflective of the 1960s, if that. Seniors living in the affluent suburbs, however, have available to them state-of-the-art technology and the latest in medical advances, drugs, and procedures.

1. Which of the following best expresses the primary point of the passage?

    A. Inner-city and suburban seniors should be cared for in hospitals equidistant from both.

    B. Inner-city seniors should be transported to suburban hospitals.

    C. Doctors should treat inner-city and suburban seniors equally.

    D. Better medical care and facilities should be provided for inner-city seniors.

    E. Inner-city seniors should have the same health care as that available to suburban seniors.

Prereading the question helps you to read the passage with a focus; that is, what is the author's point? The main point will be the overall thrust of the entire passage.

The major issue here is health care, and the author's point is that inner-city seniors should have health care better than that available to them now. The heavily charged word *intolerable* in the first sentence indicates that the author feels strongly that inadequate health care for inner-city seniors is not sufficient. Better care should be provided. Choice **D** is the best answer.

Notice that while a comparison is made to suburban seniors having superior health care, no direct argument is made that inner-city seniors should have the *same* health care as suburban seniors. The superior, *state-of-the-art* quality of suburban health care is presented in order to contrast with that of inner-city health care, and the contrast is used simply for that reason: to show how abysmal inner-city health care is in comparison. But nothing in the passage directly indicates that health care for inner-city seniors should necessarily be equivalent with that provided suburban seniors. This inference is beyond the scope of the passage; choice **E** as the author's primary point is incorrect.

Choices **A** and **B** are incorrect because the issues of hospital relocation and transportation are never raised by the passage. And choice **C** not only raises the problematic issue of "equal" treatment (which, as stated previously, is not directly indicated in the passage) but also alters the focus simply to doctors, which in the context of a passage noting medical facilities, technology, supplies, and so on, is far too narrow.

Read and analyze all the choices.

Our analysis of this health care question critically assesses each of the answer choices. As you work the Logical Reasoning questions, you should be assessing *all* the choices, eliminating those that are off-topic, irrelevant, inconsistent, or beyond the scope of the passage and retaining and considering those that you think apply. Frequently, several choices will appear to be correct. You are to choose the one that answers the question *best*, the one that is most directly relevant to the passage.

Know the Logical Reasoning question prototypes.

Most of the Logical Reasoning questions fall into a small number of categories, or prototypes. These prototypes will be scrambled throughout the Analytical Ability section and delivered in different ways. Knowing and anticipating some of these prototype questions and the type of answer they require will be of great help, especially when a question appears to be long and confusing. Once you can identify the prototype, you can spend the bulk of your time understanding the passage and the answer choices.

Prototype 1: Main Idea—The test may ask you to identify the main idea of a passage, and it may do this in one of a number of ways. As you can see in the health care passage, the main idea can be expressed as "the primary point of the passage" or "the author's primary point." Most of the time, the main idea will not be directly stated in the passage; you will have to derive it. Be careful to derive only what is most directly indicated by the passage. A jump of logic will take you beyond the scope of the passage (for example, in the preceding passage, jumping from "providing better health care" to "providing health care equal to suburban care") and will be incorrect.

Some other ways (but not all the ways) that the test may ask for the main idea prototype are

- Which of the following best expresses the point the author is attempting to make?

- The author's argument is best expressed as . . .

- Which of the following statements best expresses the author's central point in the preceding passage?

- In the preceding passage, the author argues that . . .

Sample

Whatever else might be said about American elections, they are quite unlike those in totalitarian countries in that Americans make choices. And one choice they can make in this free country is to stay home.

2. What is the author's point in the preceding passage?

   A.   Americans who do decide to vote make more choices than those who do not.

   B.   American elections embody many negative aspects, most of which are not embodied by elections in totalitarian countries.

   C.   Choosing not to vote is the prerogative of a free citizen.

   D.   All citizens vote in every election in totalitarian countries.

   E.   Most American voters are not well informed enough to vote wisely.

When you consider the multiple choices, immediately eliminate those answers that are irrelevant to the question and/or the major issue of the passage, and answers not at all addressed by the passage. Consider the preceding passage. The author's point is necessarily connected with the major issues of the passage—in this case, free choice. The author stresses the free choice *not to vote*, by way of making the point. You may eliminate all choices that do not address the free choice not to vote: **A** is irrelevant because it addresses the number of choices rather than the freedom of choice; **B** raises issues scarcely addressed in the passage — that is, the negative aspects of elections. **D** doesn't address the issue of choosing not to vote; though it notes that all citizens in totalitarian countries must vote, it neglects the main point — that Americans don't have to; **E** is irrelevant to the issue of free choice, stressing instead voter information. The best choice is **C**, which addresses the major issue, free choice, and also the author's specific point: the free choice not to vote.

Prototype 2: Inference—The dictionary defines an *inference* as the act or process of deriving logical conclusions from a line of reasoning. For example, you can infer from the statement "only a minority of children under the age of 6 have visited a dentist" that "a majority of children under the age of 6 have not visited a dentist." This type of Critical Reasoning question asks you to determine an inference or implication in a passage.

The distinction between the meanings of "infer" and "imply" is not very important in this section.

In actuality, they differ in meaning in the same way as "push" and "pull." A statement implies ("pushes out to you"); you infer ("pull from"). This grammatical distinction is not the operant element in this section; rather, you should be aware that "infers" or "implies" simply means the next logical step in an argument.

Other ways this prototype may be expressed are

- Which of the following can be inferred from the passage?

- The author of the passage implies that . . .

- Which of the following inferences can be most reliably drawn from the passage?

- What can be validly inferred from the facts and premises expressed in the passage?

Sample

We doubt that the latest government report will scare Americans away from ham, bacon, sausages, hot dogs, bologna, and salami or that it will empty out the bars or cause a run on natural food supplies. If a diet were to be mandated from Washington, Americans probably would order the exact *opposite* course. Therefore, the diet that does make sense is to eat a balanced and varied diet composed of foods from *all* food groups and containing a reasonable caloric intake.

3. Which of the following is (are) specifically implied by the passage?

    I. Vitamins are necessary to combat disease.

    II. A recent report warned of the risks of meat and alcoholic beverages.

    III. Unorthodox suggestions for a more nutritional diet were recently made by the government.

  A. I only

  B. II only

  C. III only

  D. I and II only

  E. II and III only

Because the author doubts that Americans will stop eating meats or visiting bars, one must conclude that the author is referring to the latest government report warning of the risks of meat and alcoholic beverages, statement II. Statement I concerning vitamins may be true but is not specifically implied other than in a very general sense (nutrition). Statement III is not true: Nothing suggests that the government report made *unorthodox* suggestions. The correct answer is **B**.

Prototype 3: Assumption—An assumption is an *unstated* notion on which a statement rests. For example, "I don't like people who continually interrupt me; therefore, you may conclude that I don't like Jack." For this argument to be logically valid, it must be assumed that Jack continually interrupts the author. In this type of question, you must determine what assumption lies behind the author's argument.

Other ways this prototype may be expressed are

- Which of the following underlies the preceding passage?

- The author assumes that . . .

- The preceding argument logically depends on which of the following assumptions?

- What is the presupposition of the preceding passage?

- Necessary to the preceding reasoning is the assumption that . . .

Sample

> In his first message to Congress, Harry Truman said, "The responsibility of the United States is to serve and not dominate the world."
>
> **4.** Which of the following is one basic assumption underlying Truman's statement?
>
> **A.** The United States is capable of dominating the world.
>
> **B.** The United States chooses to serve rather than dominate the world.
>
> **C.** World domination is a virtue.
>
> **D.** One must be decisive when facing a legislative body for the first time.
>
> **E.** The United States, preceding Truman's administration, had been irresponsible.

Truman's statement is not warranted unless one assumes the U.S. capability to dominate the world **A**; that assumed capability makes the choice between serving and dominating possible and is thus a basic assumption.

Prototype 4: Support/Weaken—This question type asks for the answer choice that would support or weaken the passage.

Sample

> Research comparing children of cigarette-smoking parents in Virginia with children of nonsmoking parents in West Virginia found that children of smoking parents in Virginia have lower test scores than do children of non-smokers in West Virginia. Therefore, secondhand cigarette smoke is a cause of the lower test scores.
>
> **5.** Which of the following, if true, would weaken the preceding conclusion?
>
> **A.** Children in Virginia have lower test scores than children in West Virginia, regardless of whether their parents smoke or not.
>
> **B.** More people smoke in Virginia than in West Virginia.
>
> **C.** Some children of nonsmoking parents in South Dakota have good test scores.
>
> **D.** Nonsmoking parents in Virginia have more children, on average, than those in most other states.
>
> **E.** Research has shown that smoking is not only unhealthy for the smoker, but for others in the nearby vicinity.

The correct answer is **A** "Children in Virginia have lower test scores than children in West Virginia, regardless of whether their parents smoke or not." Notice that if children in Virginia have lower test scores than children in West Virginia,

regardless of whether their parents smoke or not, then the cigarette-smoking parents cannot logically be claimed to be a cause of the lower test scores. This choice would weaken the conclusion. *However, the question could have been the following.*

Sample

> **6.** Which of the following, if true, would strengthen the logic of the argument?
>
> **A.** A recent study indicates that, in general, children in any particular state tend to have similar scores to children in any other state.
>
> **B.** Parents in any particular state have different test scores than parents in another state.
>
> **C.** Test scores, in general, are limited in their capability to measure content areas.
>
> **D.** Children of nonsmoking parents are healthier than children of smoking parents.
>
> **E.** Some children of smoking parents in Iowa have good test scores.

A correct answer is "A recent study indicates that, in general, children in any particular state tend to have similar test scores to children in any other state." Notice that this choice would strengthen the logic of the passage. If children in general have similar test scores state to state, then a subpopulation of children from nonsmoking parents having lower test scores than a subpopulation of children from nonsmoking parents strengthens the conclusion that the smoking parents may have been the cause of the difference in scores.

Sometimes the question asks for what is "relevant" to the reasoning. The choice that would either strengthen or weaken the logic is the relevant choice.

Notice that this question type may contain the words *if true*. That means that you should accept all the choices as being true. Do not challenge their reasonableness or the possibility of their occurring. Rather, accept all the choices as being true and from there decide which would strengthen or weaken the argument, whatever the question requires.

Other ways this question type may be expressed are

- Which of the following, if true, would support the argument?
- Which of the following, if true, would undermine the conclusion?
- Which of the following, if true, would challenge the logic of the reasoning of the passage?
- Which of the following would confirm the author's conclusion?

Sample

> Experience shows that for every burglar shot by a homeowner there are many more fatal accidents involving small children—family slayings that could have been avoided but for the handy presence of a gun—and thefts of handguns by the criminals they are intended to protect against.
>
> **7.** Which of the following facts, if true, would most seriously weaken the preceding contention?
>
>   **A.** Criminals tend to sell the handguns they steal during the commission of a burglary.
>
>   **B.** Burglars are also capable of causing fatal accidents.
>
>   **C.** Every burglar shot by a homeowner is stopped from committing scores of further burglaries and injuring scores of other citizens.
>
>   **D.** The number of burglars shot by homeowners is larger than the number of burglars shot by renters.
>
>   **E.** Not all fatal accidents involve guns.

Choice **C** most directly addresses the argument of the passage. The passage argues that for every burglar shot, there are scores of slayings of the innocent; **C** argues that for every burglar shot, there are scores of prevented burglaries.

Prototype 5: Conclusion—This prototype question asks for the conclusion that has not yet been stated in the passage.

Sample

> The county legislature has finally, after ten years of legal challenges, passed an antipollution ordinance. From a reading of the language, the legislation promises to be one of the most effective bills in the history of the state.
>
> **8.** Which of the following can be deduced from the passage?
>
>   **A.** The pollution problem will be eliminated in the county.
>
>   **B.** The pollution problem will be reduced in the county.
>
>   **C.** Pollution is not now a problem in the county.
>
>   **D.** Pollution will be reduced in the state.
>
>   **E.** To reduce pollution, the legislation must now be enforced.

When you are selecting a conclusion for a passage, do not merely choose what may be possible. Usually, several of the choices are possible. You are to select the one choice that may necessarily be concluded. So, in the preceding example, notice that although **A** and **B** are possible, they don't necessarily have to occur; the ordinance, after all, may not be effective despite its tough language. Choices **C** and **D** are even more remote. But of the 5 choices, **E** is the safest conclusion that can be drawn. When seeking a conclusion, choose the safest of the 5 choices.

The following are other ways the test may present this question type:

- If the preceding passage is true, then which of the following must necessarily be true?

- Which of the following is the best deduction based on the preceding passage?

- If the preceding passage is true, which of the following must logically follow?

- From the preceding passage, which of the following can reasonably be deduced?

- Based on the preceding passage, the author would conclude . . .

Sample

In the 1940s, the introduction of the 33 rpm long-playing vinyl record completely changed the way we listen to music. The breakable and 3-minute 78 rpm record soon disappeared from the marketplace. In our day, the compact disc, superior in quality and convenience, has replaced the vinyl long-playing record and will . . .

9. Which of the following is the most logical completion of the preceding passage?

   A. increase the size of the record-buying public.

   B. increase the profits of the record industry.

   C. drive the 78 rpm record from the secondhand market.

   D. make the manufacture of phonographs that play 33 rpm records unnecessary.

   E. encourage the growth of computer-generated music.

The passage compares the obsolescence of the 78 rpm record when the 33 rpm was introduced with the present-day situation in which the compact disc replaces the 33 rpm. The passage offers no information on the potential sales of the new

discs and tells us nothing of their effect on 78 rpm records or their relation to computer-generated music. If 33 rpm records have become obsolete, it follows that manufacturers will not make the machines to play them. The correct answer is **D**.

Prototype 6: Technique—This prototype question asks for the technique of reasoning used in the passage. For example, the passage may use a generalization to prove a specific point, or vice versa. Or it may use an analogy (a comparison) to further an argument. It may present a conclusion without adequately supporting it, or it may contradict its original premise within the passage. As you can see, a line of reasoning may be structured — or may be faulty — in many ways. Be aware that it usually does not matter whether you agree or disagree with the logic presented in the passage, because in this case you are not being asked to determine the passage's validity. (That's another question type.) Rather, you need to identify in structural terms how the author has set up the argument.

The test may express this prototype in these ways:

- The author makes her point primarily by . . .
- The author of the passage uses which of the following methods of persuasion?
- In the preceding passage, the author does which of the following?
- The author is using what line of reasoning to make the point?

Sample

> Tom's writing is always straightforward and honest. After all, whenever he writes a critique, he includes a special note that forewarns us that he will not mince words or make any untruthful statements. Therefore, his prose is direct and always tells the truth.
>
> **10.** The preceding statement uses which of the following to support the argument?
>
> **A.** Generalization
>
> **B.** Circular reasoning
>
> **C.** Specific examples
>
> **D.** Deductive reasoning
>
> **E.** Formal logic

The statement supports itself by restating its assumption in a slightly different way. This is circular reasoning, so the answer is **B**.

Prototype 7: Error—This prototype asks you to find a logical mistake in the reasoning. As you read the passage, look for an inconsistency or flaw in logic. Typically the error will be so striking that, if you are not looking for it, it will cause you to stop in consternation, realizing that the logic of the passage has somehow broken. Prereading the question is effective for this prototype; once you know you're looking for an error, as soon as you reach it, instead of wondering why you're having trouble with the reasoning, you realize that you have just discovered the flaw.

The test may present this prototype in these ways:

- The preceding conclusion is unsound because the author . . .
- Which of the following inconsistencies seriously undermines the author's argument?
- The reasoning in the preceding passage is flawed because . . .
- Which of the following is an inherent error in logic in the preceding passage?

Sample

Speaker: One need not look very far to find abundant examples of incivility and brutality in the most genteel corners of American society.

Questioner: Then why don't we step up law enforcement in the slums of our cities?

11. The question reveals which of the following misunderstandings?

  A. the misunderstanding that incivility and brutality have become more abundant

  B. the misunderstanding that law enforcement is related to the problems of incivility and brutality

  C. the misunderstanding of the speaker's position relative to incivility and brutality

  D. the misunderstanding of the meaning of the word "genteel"

  E. the misunderstanding of the meaning of the words "incivility" and "brutality"

The questioner understands the speaker to be referring to a problem restricted to the slums and so does not understand that *genteel* refers to upper-class situations; therefore, **D** is the answer.

Prototype 8: Parallel—Here the test asks you to "parallel" whatever line of reasoning is presented, not to identify how the author structures the line of reasoning or to identify an error in reasoning. That is, you must select the answer choice that uses either the same method of reasoning or the same type of error as the passage. Whether or not the reasoning is faulty is not the important issue; paralleling the specific reasoning or error in the passage is your concern.

Sample

> Because all dogs are animals, and cats are animals, then all cats are dogs.
>
> **12.** Which of the following parallels the reasoning in the preceding passage?
>
> **A.** All men are human beings, and children are human beings. Therefore, all men are children.
>
> **B.** All children are human beings, and some men are children. Therefore, all men are human beings.
>
> **C.** Some men are heavy, and some men are tall. Therefore, all tall men are heavy.
>
> **D.** Some animals are dogs, and some animals are cats. Therefore, all dogs and cats are animals.
>
> **E.** All cats are animals, and some animals are dogs. Therefore, some animals could be cats or dogs.

The correct answer is "All men are human beings, and children are human beings. Therefore, all men are children." Notice how this choice is faulty in the same structural way as the original passage. The correct answer is **A**.

The test may express this prototype in these ways:

- Which of the following contains a logical flaw similar to the logical flaw in the preceding passage?

- The preceding argument exhibits the same principles of inference as which of the following arguments?

- Which of the following is logically most similar to the preceding argument?

- Which of the following supports its conclusion in the same way as the preceding passage?

Sample

> Because cigarette smokers usually have a bad cough and Butch has a bad cough, it follows that Butch is probably a cigarette smoker.
>
> **13.** Which of the following most closely parallels the reasoning used in the preceding argument?
>
>   **A.** Because nonsmokers don't get emphysema and Bud doesn't have emphysema, it follows that Bud is probably not a smoker.
>
>   **B.** Because weightlifters usually have large muscles and Bill is a weightlifter, it follows that Bill has large muscles.
>
>   **C.** Because diamonds usually have little color and this gem has little color, it follows that this gem is probably a diamond.
>
>   **D.** Because people with short hair usually get more haircuts and Al has short hair, it follows that Al recently got a haircut.
>
>   **E.** Because coughing spreads germs and Sam is coughing, Sam is spreading germs.

The direct connection between cigarette smoking and coughing made in the passage is not an exclusive connection that would warrant the conclusion that because Butch has a bad cough, he's probably a cigarette smoker. Butch could have a cold. In the same way, just because diamonds have little color, you cannot conclude that a gem with little color probably is a diamond (it could be clear glass). There is a presumption of exclusivity in both examples. Choice **C** is a stronger answer than **A** because the form of the argument is precisely the same in **C** and the original. Also, **A** is an absolute (*don't*), and **C** uses the word *usually* as does the original.

You may encounter several other types of Logical Reasoning questions. The inclusion here of only eight does not mean that these are the only question types appearing in the GRE. However, your understanding and anticipation of these eight should help you more quickly identify what is being asked and therefore allow you to spend the bulk of your time reading and analyzing the passage and the answer choices.

A PATTERNED PLAN OF ATTACK

Use "logical reasoning."

↓

Pre-read the question.

↓

Focus on the major issue and/or tone
of the passage.

↓

Eliminate wrong
answer choices.

↓

Eliminate answer choices
that are irrelevant or not addressed
in the passage.

↓

Choose the best of the answer choices.
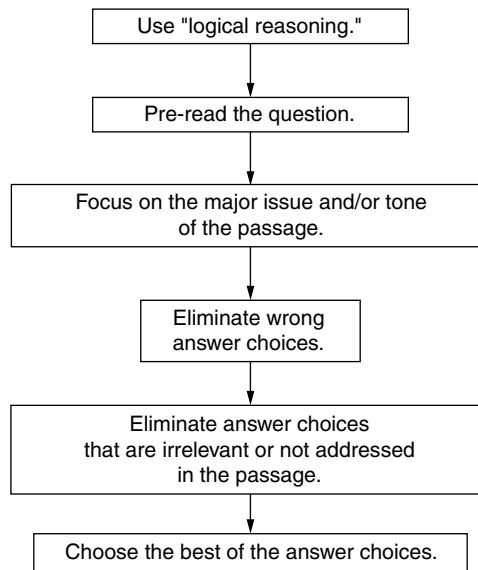
Practice Logical Reasoning Questions

Easy to Moderate

Famous painter James Whistler said, "Industry in art is a necessity — not a virtue — and any evidence of the same, in the production, is a blemish, not a quality."

1. Whistler is arguing that

A. of necessity, art becomes industrialized.

B. the qualities of art are its virtues.

C. blemished paintings are the work of overindustrious artists.

D. the product reflects the means of production.

E. the artist must work hard, but the art should look easy.

Deliberations of our governing bodies are held in public in order to allow public scrutiny of each body's actions and take to task those actions that citizens feel are not, for whatever reason, in their best interest.

2. With which of the following statements would the author of the preceding passage probably agree?

   A. Deliberations of our governing bodies should be held in public.

   B. Public scrutiny usually results in the criticism of our governing bodies.

   C. The best interests of the public usually do not coincide with the motives of our governing bodies.

   D. No government decisions ought to be kept from the public.

   E. Citizens in other countries are not cared for by the government.

Questions 3–4

Recent studies indicate that more violent crimes are committed during hot weather than during cold weather. Thus, if we could control the weather, the violent crime rate would drop.

3. The preceding argument makes which of the following assumptions?

   I. The relationship between weather conditions and crime rate is merely coincidental.

   II. The relationship between weather conditions and crime rate is causal.

   III. The relationship between weather conditions and crime rate is controllable.

   A. I only

   B. II only

   C. I and II only

   D. II and III only

   E. I, II, and III

4. The argument would be strengthened if it pointed out that

   A. the annual crime statistics for New York are higher than those for Los Angeles.

   B. in laboratory tests, increased heat alone accounted for increased aggressive behavior between members of the test group.

    C. poor socioeconomic conditions, more uncomfortable in hot weather than in cold, are the direct causes of increased crime.

    D. weather control will be possible in the near future.

    E. more people leave their doors and windows open during hot weather.

By appropriating bailout money for the depressed housing industry, Congress is opening the door to a flood of special relief programs for other recession-affected businesses.

  5. The author's attitude toward Congress's action is probably

    A. neutral.

    B. disapproving.

    C. confused.

    D. supportive.

    E. irate.

The value of a close examination of the circumstances of an aircraft accident lies not only in fixing blame but in learning lessons.

  6. The preceding statement fits most logically into which of the following types of passages?

    A. a survey of the "scapegoat phenomenon" in modern society

    B. an argument in favor of including specific details in any academic essay

    C. an argument against the usefulness of the National Transportation Safety Board

    D. a brief history of aeronautics

    E. a description of the causes of a particular aircraft accident

The department store owned by my competitor sells green necklaces that glow in the dark. Only those customers of mine wearing those necklaces must be giving business to the competition.

  7. The author foolishly assumes that

    A. the customers might find the necklaces attractive.

    B. customers are not buying other products from the competition.

    C. customers will wear the necklaces in daylight.

    D. a department store should not sell necklaces.

    E. the competition is outselling the author.

Marketing literature for a computer program called "LingoLango" cites a study in which students who used LingoLango software scored 15% higher in school than students who didn't use its software. Therefore, the software company asserts that using "LingoLango" will increase a student's school grades by 15%.

8. Which of the following statements, if true, would most seriously weaken the company's claim?

   A. "LingoLango" teaches students skills that may also help them perform better on standardized tests.

   B. Students who didn't use "LingoLango" benefited from private tutoring.

   C. Students who used "LingoLango" and then did poorly in school were more likely to report their school grades inaccurately.

   D. "LingoLango" was listed as the "Cadillac of academic preparation software" by an independent testing consultant.

   E. An equal number of male and female students used the software.

Average

Without sign ordinances, everyone with the price of a can of spray paint can suddenly decide to publicly create their own personal Picassos, and soon the entire town would start to look like something out of *Alice in Wonderland.* Therefore, we need sign ordinances.

9. The author makes which of the following basic assumptions?

   I. Spray paint is used for many signs.

  II. The entire town looking like *Alice in Wonderland* is undesirable.

 III. Sign ordinances are effective.

   A. I only

   B. II only

   C. III only

   D. I and III only

   E. I, II, and III

Questions 10–11

In most economies, the government plays a role in the market system. Governments enforce the "rules of the game," impose taxes, and may control prices through price ceilings or price supports. These actions necessarily may create shortages or surpluses. In most developed and interdependent economies, the necessity of the government's playing some role in the economy is disputed.

10. The final sentence in the passage suggests that

   A.   interdependence goes hand in hand with development.

   B.   there are underdeveloped countries whose attitude toward government control may be hostile.

   C.   disputes over government control usually come from an illiterate populace.

   D.   price supports are necessary.

   E.   economic success is a sophisticated achievement.

11. The author of the passage would probably agree that

   A.   economic surpluses are always good.

   B.   market shortages are a necessary evil.

   C.   higher prices strengthen the economy.

   D.   price ceilings add to the shortages.

   E.   surpluses are not usually created intentionally.

Questions 12–13

The new vehicle inspection program is needed to protect the quality of the state's air, for us and for our children. Auto exhausts are a leading contributor to coughing, wheezing, choking, and pollution. The state's long-term interests in the health of its citizens and in this area as a place to live, work, and conduct business depend on clean air.

12. Which of the following, if true, would most seriously weaken the preceding argument?

   A.   Because smog devices were made mandatory automotive equipment by the existing inspection program three years ago, pollution has decreased dramatically and continues to decrease.

   B.   Pollution problems are increasing in other states as well as in this one.

   C.   Sometimes coughing, wheezing, and choking are caused by phenomena other than pollution.

   D.   Vehicle inspectors are not always careful.

   E.   The state should not impose its interests upon the citizenry but should instead allow public health to be regulated by private enterprise.

13. Which of the following is an unstated assumption made by the author?

    A. Working and conducting business may be different activities.

    B. The state has been interested in the health of its citizens even before this inspection program was proposed.

    C. Exhaust emissions contribute to pollution.

    D. The new inspection program will be effective.

    E. Our ancestors did not suffer from air pollution.

Questions 14–17

The older we get, the less sleep we should desire. This is because our advanced knowledge and capabilities are most enjoyable when used; therefore, "mindless" sleep becomes a waste of time.

14. Which of the following distinctions is NOT expressed or implied by the author?

    A. between sleep and wakefulness

    B. between youth and maturity

    C. between productivity and waste

    D. between a desire and a requirement

    E. between more sleep and less sleep

15. The author of this statement assumes that

    A. less sleep is not desirable.

    B. sleep advances knowledge and capabilities.

    C. mindlessness coincides with wakefulness.

    D. knowledge and capabilities naturally improve with age.

    E. sleep is only for the young.

16. This author's statement might be strengthened if he or she pointed out that

    A. advanced knowledge is often manifested in creative dreams.

    B. the mind is quite active during sleep.

    C. few empirical studies have concluded that sleep is an intellectual stimulant.

    D. advanced capabilities are not necessarily mind-associated.

    E. dreams teach us how to use waking experiences more intelligently.

17. The author's statement might be weakened by pointing out that

    A. 8 hours of sleep is a cultural, not a physical, requirement.

    B. the most capable people rarely sleep.

    C. rest is a positive contribution to knowledge and capability.

    D. young children enjoy themselves less than knowledgeable adults.

    E. people rarely waste time during their waking hours.

Questions 18–19

It is evident that the methods of science have been highly successful. Psychologist B.F. Skinner believes that the methods of science should be applied to the field of human affairs. We are all controlled by the world, part of which is constructed by humans. Is this control to occur by accident, by tyrants, or by ourselves? A scientific society should reject accidental manipulation. He asserts that a specific plan is needed to promote fully the development of human beings and society. We cannot make wise decisions if we continue to pretend that we are not controlled.

As Skinner points out, the possibility of behavioral control is offensive to many people. We have traditionally regarded humans as free agents whose behavior occurs by virtue of spontaneous inner changes. We are reluctant to abandon the internal "will," which makes prediction and control of behavior impossible.

18. According to the passage, Skinner would probably agree with each of the following statements EXCEPT:

    A. Rats and pigeons are appropriate animals for behavioristic study.

    B. These behaviors we normally exhibit are not the only ones we are capable of.

    C. The concept of behavioral control has popular appeal.

    D. Inner causes of behavior are more difficult to observe than outer ones.

    E. Positive reinforcement will affect learning in school.

19. The author implies that Skinner feels that the scientific procedure he advocates might be effective as

    A. a means of enhancing our future.

    B. an explanation of the causes of dictatorships.

    C. a means for replacing teachers with computers.

    D. a way of identifying characteristics common to rats, pigeons, and humans.

    E. a way to understand the human mind.

Above Average to Difficult

Questions 20–21

Votes on June 8 approved a $495 million bond issue for a state prison construction that is an obvious priority. Now the legislature has voted to put five more general obligation bond issues on the November ballot, adding another $1.5 billion to the state's long-term debt. Those on the November menu include $500 million for building and remodeling public schools, $450 million to extend the veterans' home loan program, $200 million to subsidize low-interest mortgages for first-time home buyers, $85 million to acquire land for environmental protection, and $280 million to help counties expand or remodel their jails.

20. Which of the following statements is a point to which the author is most probably leading?

   A. Two of these bond issues are certainly more important than the others.

   B. People must face the obvious conclusion that prison construction is much less important than the improvement of public education and social programs for lawful citizens.

   C. The cost of these bond issues is, on the face of it, negligible.

   D. The voters cannot be expected to help make financial decisions for the state, because most voters are suffering from their own severe financial problems.

   E. These five bond proposals are quite enough, and between now and November voters will have to study them carefully to make sure that five are not too many.

21. Which of the following facts would most weaken an argument for approval of the five new bond issues?

   A. Environmental protection is not an overriding concern of the constituency.

   B. The state's long-term debt cannot lawfully exceed $1.5 billion.

   C. Improvements in education, the environment, criminal prosecution, and the real estate market are favored by the voters.

   D. Similar bond proposals in other states have not been successful.

   E. Two bills related to the housing of criminals are quite enough.

The state's empty $4 million governor's mansion on the banks of the Capitol River may be sort of a suburban Taj Mahal, as the governor once said. But why shouldn't the state unload it?

22. Which of the following is one of the author's basic assumptions?

    A. The governor's mansion is out of place in the suburbs.

    B. The reader is aware of the state's intention to "unload" the governor's mansion.

    C. No one has yet lived in the governor's mansion.

    D. The state is trying to sell the governor's mansion.

    E. The governor was correct.

In 1994, when implementing an employee evaluation program, Acme Company's gross income reached an all-time high; however, after dropping the program during 1995, Acme's income dropped by 50%. Therefore, it's clear that Acme's employees perform better when being evaluated.

23. Which of the following statements, if true, would most seriously weaken the preceding conclusion?

    A. Acme employees received executive performance evaluations in 1994.

    B. The economy in 1995 was different from the economy in 1994.

    C. Acme employees worked harder when they knew they would be evaluated.

    D. The employee evaluation program served to increase the company moral during 1994.

    E. Acme retained leadership in the industry, despite falling sales.

One form of paper recycling draws from post-consumer waste products. This term means that the paper is produced from paper products that were once used in homes or industry. However, another kind of paper can also be called "recycled." This paper is produced from by-products in the paper-making process itself, which means the paper has never been used by a consumer. Although the former method is more environmentally sound, the latter produces a paper with highest aesthetic quality.

25. If the preceding passage is true, then it is also true that people who buy the best-looking recycled paper are

    A. buying paper that was once used in homes and industry.

    B. inspecting the by-products of the paper-making process.

    C. insisting on a bleached paper made from post-consumer waste.

    D. purchasing paper that does not come from the most environmentally sound process.

    E. reducing the amount of paper they use.

The *Financial Times Magazine* devoted two pages to the stock market crash of 1929; however, the same magazine covered 1985's Black Monday with 25 pages.

25. The best explanation for this difference is that

    A. the crash of 1929 was viewed as more important than Black Monday.

    B. the *Financial Times Magazine* regretted their underreporting of the 1929 crash and did not wish to make the same mistake again.

    C. the implications of the 1929 crash were more immediately apparent.

    D. the size of the magazine had increased, so editors could devote more space to the 1985 story.

    E. the press in 1929 devoted more time to covering stories about successes instead of failures.

Answers and Explanations for the Practice Logical Reasoning Questions

Easy to Moderate

1. E. Whistler is saying that constant effort (industry) is necessary but that the artwork (production) should not evidence that effort.

2. A. By describing in very positive terms the effects of public deliberations, the author suggests the opinion that such deliberations *should* be public.

3. B. The only correct choice is II; it is argued that hot weather *causes* crime. This is not mere coincidence, and the statement does not say that people *can* control the weather.

4. B. The argument posits an exclusive relationship between hot weather and crime. **A**, **C**, and **E** contradict such an exclusive relationship. **D** is irrelevant to the relationship, but **B** provides evidence supporting and strengthening the heat-crime relationship.

5. **B.** By describing the special relief programs as a *flood*, the author gives the programs a negative connotation and suggests disapproval.

6. **E.** This choice is related most fully to the subject matter of the original statement.

7. **B.** The author does not realize that customers not wearing green necklaces may have bought other items from the competition.

8. **C.** This question asks you to select the answer choice that would weaken the claim that purchasing "LingoLango" improves a person's school grades. The best strategy is to read through the choices and eliminate those that are irrelevant or that strengthen (rather than weaken) the argument. After you do this, you are left with choice **C**: Students who purchased the software and then scored poorly were more likely to report inaccurately their scores. They may likely have reported their grades higher than what they actually were. If so, the results of the study are suspect, and "LingoLango" may not be as helpful as claimed.

Average

9. **E.** All the statements are assumptions of the author essential to the argument. The author assumes spray paint to be the medium that graffiti painters use and implicitly abhors the possibility of a town looking like *Alice in Wonderland.* In addition, his or her desire for sign ordinances assumes that they work and are effective in deterring spray paining.

10. **B.** The last sentence says that it is *developed* or *interdependent* economies that acquiesce to the idea that government must control the economy to some extent. This leaves underdeveloped countries unspoken for and raises the possibility they might *not* acquiesce to government control.

11. **B.** The paragraph states that government action *may create shortages* or *surpluses.*

12. **A.** The argument for further supervision of vehicle use is most weakened by the statement that present safeguards are already doing the job. **C** and **D** slightly weaken the argument but do not address the overall position of the author.

13. **D.** In order to argue for a new inspection program, the author must assume that that particular program, if enacted, will be effective. **C**, the only other choice related to the points of the argument, expresses stated information rather than an unstated assumption.

14. **D.** The author does not address the distinction between how much sleep we desire and how much our bodies require. Each of the other distinctions is addressed in the passage.

15. **D.** In the passage, becoming older corresponds with *advanced knowledge and capabilities.* Choices **A**, **B**, and **C** should be eliminated because each is contradicted by the assumptions of the passage (the passage suggests that *more* sleep is undesirable, knowledge and capabilities are connected with *wakefulness,* and mindlessness is connected with *sleep*). Choice **E** is a generalization not at all concerned with amount of sleep and therefore not relevant to the passage.

16. C. Choices **A**, **B**, and **E** present information that supports the value of sleep, and **D** dissociates advanced capabilities from the mind, thus damaging the author's mind/mindlessness distinction.

17. C. Only choice **C** asserts the positive value of sleep and thus weakens the author's stance in favor of decreased sleep.

18. C. The second paragraph reveals his recognition that behaviorism is offensive to many people — that it does *not* have popular appeal.

19. A. The passage discusses the possible application of Skinner's theory to the field of human affairs and in promoting the development of humankind.

Above Average to Difficult

20. E. By listing high costs, the author is probably leading to the conclusion that the state's debt is being strained, a conclusion expressed in **E**. **C** contradicts the author's emphasis on high costs. The passage neither expresses nor implies **A**, **B**, and **D**; choosing those answers relies on extraneous assumptions.

21. B. This fact indicates that the passage of all the bond measures, which would take the debt over $1.5 billion, is illegal.

22. B. The author's final question necessarily rests on the assumption that the reader is aware of the state's intention; the author omits information expressing or explaining this intention.

23. B. Your task here is to find a statement that weakens the conclusion in the passage: the evaluation program boosted productivity. This claim contains lots of possible weak points, but the only one listed in the choices is choice **B** — that the economy was different. If the economy was different for those two years, you cannot confidently say that the evaluation program was the cause of increased income in 1994. If the economy was lousy in 1995, the income plausibly would still be bad, even if an evaluation program were in place. Therefore, choice **B** seriously weakens the conclusion in the passage.

24. D. This question requires you to read through the information on recycled paper and then draw a conclusion based on that information. The question here is if people insist on the best-looking recycled paper, then which paper have they purchased? The passage states that post-consumer waste paper is not the best looking. So these people won't buy this kind of paper; instead, they will buy paper made from by-products. To find the right choice, you also have to remember that using post-consumer waste is the most environmentally sound process. After you put these facts together (the best-looking paper does not come from the most environmentally sound process), you have your answer, choice **D**.

25. D. Your job in this question is to find the most reasonable explanation about the huge difference in coverage for the two financial disasters. The secret here is simply to read through the choices and ask yourself: Does this make sense and how reasonable is this explanation? After doing this for each choice, you should find that, although not perfect, choice **D** is the best choice: The magazine had grown in size and could therefore cover the 1985 crash with more pages.

Full-Length GRE CBT Practice Test

This section contains a practice simulation GRE CBT. The practice test is followed by complete answers, explanations, and analysis techniques. The format, levels of difficulty, questions structure, and number of questions are similar to those on the actual GRE CBT.

The actual GRE CBT is copyrighted and may not be duplicated, and these questions are not taken directly from actual tests.

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VERBAL SECTION

TIME: 30 Minutes

30 Questions

General Directions: Your score on the verbal section will be based on how well you do on the questions presented and also on the number of questions you answer. Try to pace yourself so that you have sufficient time to consider every question. If possible, answer all 30 questions in this section. Guess if you need to. Select the best answer choice for each question.

Note: Because you are checking answers as you go on this simulated GRE CBT, you should add about 5 minutes to your testing time.

Directions: Analogies

Each question below gives you a related pair of words or phrases. Select the lettered pair that *best* expresses a relationship similar to that in the original pair of words.

1-3. PHOTOSYNTHESIS : OXYGEN:

   A. camera : photograph

   B. combustion : heat

   C. past : present

   D. plant : light

   E. inhalation : health

> Answer: 1-3 **B**
>
> If you answered 1-3 **incorrectly, go to 2-2**.
> If you answered 1-3 **correctly, go to 2-4**.

Directions: Sentence Completion

Each blank in the following sentences indicates that something has been omitted. Considering the lettered words beneath the sentence, choose the word or set of words that best fits the whole sentence.

2-2. The New Testament was written in the Greek language, and ideas derived from Greek philosophy were _____ in many parts of it.

   A. altered

   B. criticized

   C. incorporated

   D. nullified

   E. translated

2-4. Although the 13-year-old boys grew _____ under the teacher's new discipline policy, the girls seemed _____ by it.

   A. anxious . . . intimidated

   B. argumentative . . . frustrated

   C. restive . . . unperturbed

   D. remorseful . . . enchanted

   E. taciturn . . . attracted

Answers: 2-2 **C**, 2-4 **C**

If you answered 2-2 **incorrectly, go to 3-1**.
If you answered 2-2 **correctly, go to 3-3**.

If you answered 2-4 **incorrectly, go to 3-3**.
If you answered 2-4 **correctly, go to 3-5**.

3-1. During the *Pax Romana,* the _____ of material prosperity in the ancient world was reached.

   A. simplification

   B. stratification

   C. majority

   D. depth

   E. pinnacle

3-3. President Eisenhower was widely _____ for refusing to _____ the excesses of the loathed Senator McCarthy.

   A. applauded . . . implement

   B. chagrined . . . prevent

   C. criticized . . . curb

   D. condemned . . . promote

   E. supported . . . ostracize

3-5. The population of a species at any given time is determined by the ratio of the biotic _____ to environmental resistance.

   A. jeopardy

   B. potential

   C. excitement

   D. lexicon

   E. annoyance

Answers: 3-1 **E**, 3-3 **C**, 3-5 **B**

If you answered 3-1 **incorrectly, go to 4-1**.
If you answered 3-1 **correctly, go to 4-2**.

If you answered 3-3 **incorrectly, go to 4-2**.
If you answered 3-3 **correctly, go to 4-4**.

If you answered 3-5 **incorrectly, go to 4-4**.
If you answered 3-5 **correctly, go to 4-5**.

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Directions: Antonyms

Each word in CAPITAL LETTERS is followed by 5 words or phrases. The correct choice is the word of phrase whose meaning is most nearly *opposite* to the meaning of the word in capitals. You may be required to distinguish fine shades of meaning. Look at all choices before marking your answer.

4-1. RESUSCITATE

    A. succumb

    B. crush

    C. flatten

    D. kill

    E. succeed

4-2. MITIGATED

    A. repeated

    B. aggravated

    C. terminated

    D. raised

    E. declined

4-4. UBIQUITOUS

    A. hiding

    B. localized

    C. jailed

    D. bilious

    E. exhaustive

4-5. ABSTEMIOUS

    A. punctual

    B. vainglorious

    C. gluttonous

    D. finicky

    E. disdainful

Answers: 4-1 **D**, 4-2 **B**, 4-4 **B**, 4-5 **C**

If you answered 4-1 **incorrectly, go to 5-1**.
If you answered 4-1 **correctly, go to 5-2**.

If you answered 4-2 **incorrectly, go to 5-1**.
If you answered 4-2 **correctly, go to 5-3**.

If you answered 4-4 **incorrectly, go to 5-3**.
If you answered 4-4 **correctly, go to 5-5**.

If you answered 4-5 **incorrectly, go to 5-4**.
If you answered 4-5 **correctly, go to 5-5**.

5-1. The horrifying _____ of the fire was reported on all the news stations, and the arson squad worked later through the week to uncover the _____ of the tragedy.

    A. scene . . . rumble

    B. result . . . jeopardy

    C. aftermath . . . cause

    D. cost . . . liability

    E. origin . . . reality

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5-2. If the patriotic legend revealed the hard _____ of Roman culture, the love story tended to show its _____ belly.

    A. facts . . . fictitious

    B. backbone . . . vulnerable

    C. times . . . easygoing

    D. stubbornness . . . abdominal

    E. paternalism . . . maternal

5-3. With her customary _____, the Queen replied to reporters only with a smile, but the President _____ happily about what a good time he was having.

    A. aplomb . . . objected

    B. reticence . . . exclaimed

    C. choler . . . spoke

    D. tact . . . grumbled

    E. volubility . . . gushed

5-4. When finishing an essay, do not end with a(n) _____ for not having said anything, or with a(n) _____ statement about the unfairly small time period.

    A. flourish . . . unwarranted

    B. ellipsis . . . analogical

    C. apology . . . indignant

    D. smirk . . . silly

    E. excuse . . . political

5-5. Although the seemingly _____ nature of the task appeared fundamental, further application of the principles seemed _____.

    A. facile . . . awkward

    B. complex . . . easy

    C. redundant . . . impossible

    D. parallel . . . obvious

    E. devious . . . ambiguous

Answers: 5-1 **C**, 5-2 **B**, 5-3 **B**, 5-4 **C**, 5-5 **A**

If you answered 5-1 **incorrectly, go to 6-1**.
If you answered 5-1 **correctly, go to 6-2**.

If you answered 5-2 **incorrectly, go to 6-1**.
If you answered 5-2 **correctly, go to 6-3**.

If you answered 5-3 **incorrectly, go to 6-2**.
If you answered 5-3 **correctly, go to 6-4**.

If you answered 5-4 **incorrectly, go to 6-3**.
If you answered 5-4 **correctly, go to 6-5**.

If you answered 5-5 **incorrectly, go to 6-4**.
If you answered 5-5 **correctly, go to 6-5**.

6-1. *Rite of Passage* is a good novel by any standards; _____, it should rank high on any list of science fiction.

    A. consistently

    B. invariably

    C. lingeringly

    D. consequently

    E. fortunately

6-2. Feeling restless and unhappy, he left the house to take a quiet stroll, hoping to shake off his mood of _____ and uncertainty.

    A. despondency

    B. ardor

    C. perversity

    D. pretense

    E. reticence

6-3. When the war ended, the king _____ all claims for damages, but he is now demanding _____ that will cost millions of dollars.

    A. relinquished . . . expenses

    B. questioned . . . repayments

    C. waived . . . reparations

    D. accepted . . . funds

    E. reviewed . . . indemnity

6-4. After years of unchecked exploitation of its natural resources, the state, predictably, has _____ the population of its native plants and animals.

    A. stymied

    B. increased

    C. reduced

    D. normalized

    E. decimated

6-5. Brandon Smith's penetrating criticism of the new play, *Zoot Suit,* was as _____ as a surgeon's scalpel.

    A. truthful

    B. catty

    C. succinct

    D. trenchant

    E. verbose

Answers: 6-1 **D**, 6-2 **A**, 6-3 **C**, 6-4 **E**, 6-5 **D**

If you answered 6-1 **incorrectly, go to 7-1**.
If you answered 6-1 **correctly, go to 7-2**.

If you answered 6-2 **incorrectly, go to 7-1**.
If you answered 6-2 **correctly, go to 7-3**.

If you answered 6-3 **incorrectly, go to 7-2**.
If you answered 6-3 **correctly, go to 7-4**.

If you answered 6-4 **incorrectly, go to 7-3**.
If you answered 6-4 **correctly, go to 7-5**.

If you answered 6-5 **incorrectly, go to 7-4**.
If you answered 6-5 **correctly, go to 7-5**.

7-1. LUXURIANT

    A. profound

    B. curious

    C. small

    D. miserly

    E. peeling

7-2. PLETHORA

    A. supply

    B. alliance

    C. enigma

    D. modicum

    E. shortage

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7-3. LACONIC

    A. compendious

    B. obtrusive

    C. verbose

    D. lethargic

    E. creative

7-4. INEFFABLE

    A. dictatable

    B. separable

    C. cogent

    D. definable

    E. ethereal

7-5. MULCT

    A. deprecate

    B. award

    C. send

    D. impute

    E. fertilize

Answers: 7-1 **C**, 7-2 **E**, 7-3 **C**, 7-4 **D**, 7-5 **B**

If you answered 7-1 **incorrectly, go to 8-1**.
If you answered 7-1 **correctly, go to 8-2**.

If you answered 7-2 **incorrectly, go to 8-1**.
If you answered 7-2 **correctly, go to 8-3**.

If you answered 7-3 **incorrectly, go to 8-2**.
If you answered 7-3 **correctly, go to 8-4**.

If you answered 7-4 **incorrectly, go to 8-3**.
If you answered 7-4 **correctly, go to 8-5**.

If you answered 7-5 **incorrectly, go to 8-4**.
If you answered 7-5 **correctly, go to 8-5**.

8-1. COVENANT

    A. condemnation

    B. breach

    C. disillusion

    D. inference

    E. argument

8-2. PRECARIOUS

    A. carnivorous

    B. caring

    C. equivocal

    D. soluble

    E. certain

8-3. CONTUMACIOUS

    A. compliant

    B. reciprocal

    C. pertinacious

    D. obdurate

    E. dogged

8-4. ERSATZ

    A. serious

    B. separate

    C. stable

    D. genuine

    E. modest

8-5. AESTHETICISM

    A. philistinism

    B. formlessness

    C. pragmatism

    D. resolution

    E. enthusiasm

Answers: 8-1 **B**, 8-2 **E**, 8-3 **A**, 8-4 **D**, 8-5 **A**

If you answered 8-1 **incorrectly, go to 9-1**.
If you answered 8-1 **correctly, go to 9-2**.

If you answered 8-2 **incorrectly, go to 9-1**.
If you answered 8-2 **correctly, go to 9-3**.

If you answered 8-3 **incorrectly, go to 9-2**.
If you answered 8-3 **correctly, go to 9-4**.

If you answered 8-4 **incorrectly, go to 9-3**.
If you answered 8-4 **correctly, go to 9-5**.

If you answered 8-5 **incorrectly, go to 9-4**.
If you answered 8-5 **correctly, go to 9-5**.

9-1. SPORADIC

    A. constant

    B. indifferent

    C. internal

    D. piglike

    E. organized

9-2. BELLICOSE

    A. varicose

    B. fretful

    C. ringing

    D. peaceful

    E. calm

9-3. MORIBUND

    A. spiritual

    B. convalescent

    C. extant

    D. progressive

    E. faded

9-4. INSOUCIANT

    A. condoned

    B. insistent

    C. slovenly

    D. concerned

    E. defaulted

9-5. ESCHEW

    A. hasten

    B. grant

    C. swallow

    D. decide

    E. court

Answers: 9-1 **A**, 9-2 **D**, 9-3 **B**, 9-4 **D**, 9-5 **E**

If you answered 9-1 **incorrectly, go to 10-1**.
If you answered 9-1 **correctly, go to 10-2**.

If you answered 9-2 **incorrectly, go 10-1**.
If you answered 9-2 **correctly, go to 10-3**.

If you answered 9-3 **incorrectly, go to 10-2**.
If you answered 9-3 **correctly, go to 10-4**.

If you answered 9-4 **incorrectly, go to 10-3**.
If you answered 9-4 **correctly, go to 10-5**.

If you answered 9-5 **incorrectly, go to 10-4**.
If you answered 9-5 **correctly, go to 10-5**.

10-1. RESERVE

    A. buoyancy

    B. revelry

    C. action

    D. loquacity

    E. nostalgia

10-2. VACILLATION

    A. devotion

    B. stability

    C. pleasantry

    D. vitality

    E. omnipotence

10-3. SOPORIFIC

    A. exciting

    B. terrific

    C. specific

    D. vapid

    E. sophomoric

10-4. FACTOTUM

    A. idol

    B. amateur

    C. specialist

    D. rationalist

    E. dreamer

10-5. HIE

    A. undulate

    B. create

    C. saunter

    D. heave

    E. gnaw

Answers: 10-1 **D**, 10-2 **B**, 10-3 **A**, 10-4 **C**, 10-5 **C**

If you answered 10-1 **incorrectly, go to 11-1**.
If you answered 10-1 **correctly, go to 11-2**.

If you answered 10-2 **incorrectly, go to 11-1**.
If you answered 10-2 **correctly, go to 11-3**.

If you answered 10-3 **incorrectly, go to 11-2**.
If you answered 10-3 **correctly, go to 11-4**.

If you answered 10-4 **incorrectly, go to 11-3**.
If you answered 10-4 **correctly, go to 11-5**.

If you answered 10-5 **incorrectly, go to 11-4**.
If you answered 10-5 **correctly, go to 11-5**.

11-1. INITIATE : END ::

    A. attend : ignore

    B. inure : harden

    C. remain : retreat

    D. infer : imply

    E. require : insure

11-2. TAPESTRY : LOOM ::

    A. film : screen

    B. map : legend

    C. painting : easel

    D. watercolor : mat

    E. symphony : orchestra

11-3. TEDIOUS : BOREDOM ::

    A. garrulous : misunderstanding

    B. sinuous : obscenity

    C. enigmatic : uncertainty

    D. tendentious : uplift

    E. youthful : rejuvenation

11-4. GROVEL : SERVILE ::

    A. boast : opportunistic

    B. risk : fortuitous

    C. denigrate : ironic

    D. foresee : prescient

    E. neglect : indiscriminate

11-5. BANTER : PERSIFLAGE ::

    A. similarity : analogy

    B. ambiguity : anticlimax

    C. simile : euphemism

    D. talk : poetry

    E. cliché : epigram

Answers: 11-1 **A**, 11-2 **C**, 11-3 **C**, 11-4 **D**, 11-5 **A**

If you answered 11-1 **incorrectly, go to 12-1**.
If you answered 11-1 **correctly, go to 12-2**.

If you answered 11-2 **incorrectly, go to 12-1**.
If you answered 11-2 **correctly, go to 12-3**.

If you answered 11-3 **incorrectly, go to 12-2**.
If you answered 11-3 **correctly, go to 12-4**.

If you answered 11-4 **incorrectly, go to 12-3**.
If you answered 11-4 **correctly, go to 12-5**.

If you answered 11-5 **incorrectly, go to 12-4**.
If you answered 11-5 **correctly, go to 12-5**.

12-1. DETER

    A. surpass

    B. delay

    C. encourage

    D. exchange

    E. hesitate

12-2. FLOCK

    A. disperse

    B. repair

    C. herd

    D. avoid

    E. moisten

12-3. WRANGLE

    A. concord

    B. ironing

    C. protest

    D. benefit

    E. immunity

12-4. PERFIDY

    A. faithfulness

    B. treachery

    C. infidelity

    D. fallaciousness

    E. loving

12-5. TRACTABLE

    A. retractable

    B. refractory

    C. refreshing

    D. retrainable

    E. retrenched

Answers: 12-1 **C**, 12-2 **A**, 12-3 **A**, 12-4 **A**, 12-5 **B**

If you answered 12-1 **incorrectly, go to 13-1**.
If you answered 12-1 **correctly, go to 13-2**.

If you answered 12-2 **incorrectly, go to 13-1**.
If you answered 12-2 **correctly, go to 13-3**.

If you answered 12-3 **incorrectly, go to 13-2**.
If you answered 12-3 **correctly, go to 13-4**.

If you answered 12-4 **incorrectly, go to 13-3**.
If you answered 12-4 **correctly, go to 13-5**.

If you answered 12-5 **incorrectly, go to 13-4**.
If you answered 12-5 **correctly, go to 13-5**.

13-1. SCOWL : SMILE ::

    A. antidote : serum

    B. square : circle

    C. cost : discount

    D. stock : bond

    E. despair : hope

13-2. LECHER : LUST ::

    A. burglar : swag

    B. glutton : greed

    C. archer : bow

    D. manager : expertise

    E. factor : merchant

13-3. CLARIFY : CONFUSION ::

    A. retreat : victory

    B. declare : bankruptcy

    C. criticize : euphoria

    D. mediate : altercation

    E. extend : ephemera

13-4. FINCH : ORNITHOLOGY ::

    A. fetus : etymology

    B. rain : geology

    C. potsherd : archeology

    D. mind : philology

    E. word : sociology

13-5. RUNE : ALPHABET

    A. cairn : stone

    B. team : contest

    C. mystery : puzzle

    D. forest : mountain

    E. star : constellation

Answers: 13-1 **E**, 13-2 **B**, 13-3 **D**, 13-4 **C**, 13-5 **E**

If you answered 13-1 **incorrectly, go to 14-1**.
If you answered 13-1 **correctly, go to 14-2**.

If you answered 13-2 **incorrectly, go to 14-1**.
If you answered 13-2 **correctly, go to 14-3**.

If you answered 13-3 **incorrectly, go to 14-2**.
If you answered 13-3 **correctly, go to 14-4**.

If you answered 13-4 **incorrectly, go to 14-3**.
If you answered 13-4 **correctly, go to 14-5**.

If you answered 13-5 **incorrectly, go to 14-4**.
If you answered 13-5 **correctly, go to 14-5**.

14-1. MOAT : CASTLE ::

    A. cummerbund : waist

    B. shoe : foot

    C. root : earth

    D. elevator : skyscraper

    E. drawbridge : river

14-2. DOLLAR : DIME ::

    A. pound : euro

    B. century : decade

    C. ewe : lamb

    D. bracelet : necklace

    E. bus : automobile

14-3. CHEF : RECIPE ::

    A. carpenter : tool

    B. farmer : seed

    C. saleswoman : pitch

    D. novelist : story

    E. musician : score

14-4. OSSIFY : BONE ::

    A. refine : ore

    B. evaporate : water

    C. pulverize : dust

    D. swear : allegiance

    E. petrify : fear

14-5. NYMPH : FAUN ::

    A. sheep : goat

    B. temple : altar

    C. duck : drake

    D. cowboy : horse

    E. cat : kitten

Answers: 14-1 **A**, 14-2 **B**, 14-3 **E**, 14-4 **C**, 14-5 **C**

If you answered 14-1 **incorrectly, go to 15-1**.
If you answered 14-1 **correctly, go to 15-2**.

If you answered 14-2 **incorrectly, go to 15-1**.
If you answered 14-2 **correctly, go to 15-3**.

If you answered 14-3 **incorrectly, go to 15-2**.
If you answered 14-3 **correctly, go to 15-4**.

If you answered 14-4 **incorrectly, go to 15-3**.
If you answered 14-4 **correctly, go to 15-5**.

If you answered 14-5 **incorrectly, go to 15-4**.
If you answered 14-5 **correctly, go to 15-5**.

15-1. In spite of competition, the newspaper _____ remains the best _____ of communication between advertisers and customers.

    A. hardly . . . vehicle

    B. never . . . means

    C. still . . . medium

    D. often . . . measure

    E. consistently . . . standard

15-2. There has been a large amount of _____ and lack of _____ in the description of such categories as ethnic, and especially racial, groups.

    A. disagreement . . . consensus

    B. bias . . . prejudice

    C. agreement . . . harmony

    D. violence . . . lawfulness

    E. indoctrination . . . malaise

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15-3. Rural dwellers who hold _____ values may, at times, be altogether uncritical of various federal programs aimed at the regulation and _____ of agriculture.

    A. rigorous . . . legalization

    B. conventional . . . subsidization

    C. ludicrous . . . obfuscation

    D. rhythmic . . . communization

    E. similar . . . decimation

15-4. The primitivist assumption that the human disposition is naturally _____ is likely to depend on blaming institutions for all the _____ in the world.

    A. innocent . . . happiness

    B. corruptible . . . warfare

    C. malleable . . . indifference

    D. benevolent . . . corruption

    E. untrustworthy . . . crime

15-5. The decline of _____ forms was hastened by the discovery of global trade routes, which soon produced basic _____ in the supply of money and price structure, thus dooming land as the basic element of wealth and preferment.

    A. feudal . . . alterations

    B. oligarchical . . . change

    C. democratic . . . remedies

    D. monarchical . . . alternatives

    E. barbaric . . . reductions

Answers: 15-1 C, 15-2 A, 15-3 B, 15-4 D, 15-5 A

Check your answers and continue to the reading passage.

Directions: Reading Comprehension

Questions follow each of the passages below. Using only the stated or implied information in each passage, answer the questions.

Questions 16–17

People pondering the origin of language for the first time usually arrive at the conclusion that it developed gradually as a system of conventionalized grunts,
(5) hisses, and cries and must have been a very simple affair in the beginning. But when we observe the language behavior of what we regard as primitive cultures, we find it strikingly elaborate and com-
(10) plicated. Steffanson, the explorer, said that "in order to get along reasonably well an Eskimo must have at the tip of his tongue a vocabulary of more than 10,000 words, much larger than the ac-
(15) tive vocabulary of an average business-man who speaks English." Moreover, a single noun can be spoken or written in several hundred different forms. The Eskimo language is one of the most dif-
(20) ficult to learn, with the result that almost no traders or explorers have even tried to learn it. Consequently, there has grown up, in intercourse between Eskimos and whites, a jargon similar to

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((25)) the pidgin English used in China, with a vocabulary of from 300 to 600 uninflected words, most of them derived from Eskimo but some derived from English, Danish, Spanish, Hawaiian,
(30) and other languages. It is the jargon which is usually referred to by travelers as the "Eskimo language."

16. It can be inferred that pidgin English used in China

   A. includes many words derived from English, Danish, Spanish, and Hawaiian.

   B. was invented by explorers from Europe.

   C. was developed because of the difficulty of the Chinese.

   D. has a large vocabulary of inflected words.

   E. has many words derived from Eskimo.

17. The overall point of the passage is that

   A. languages may reflect cultural attitudes.

   B. most "primitive" languages are similar to one another.

   C. all languages are subject to change and development.

   D. comparison of "primitive" languages may reveal the origin.

   E. a "primitive" language may be large and complex.

Answers: 16 **C**, 17 **E**

If you answered **none of the 2 reading questions correctly, go to 18-1**.

If you answered **1 of the 2 reading questions correctly, go to 18-3**.

If you answered **both of the reading questions correctly, go to 18-5**.

18-1. AMBIGUOUS : CLEAR ::

   A. few : plural

   B. ambivalent : dexterous

   C. synthetic : real

   D. impassioned : sympathetic

   E. poignant : acute

18-3. LARVA : ADULT ::

   A. spider : insect

   B. kid : goat

   C. tadpole : frog

   D. female : male

   E. fish : mammal

18-5. ANACHRONISM : PERIOD ::

   A. calendar : year

   B. setting : scene

   C. fallacy : logic

   D. crime : property

   E. repetition : comma

GO ON TO THE NEXT PAGE

Answers: 18-1 **C**, 18-3 **C**, 18-5 **C**

If you answered 18-1 **incorrectly, go to 19-1**.
If you answered 18-1 **correctly, go to 19-2**.

If you answered 18-3 **incorrectly, go to 19-2**.
If you answered 18-3 **correctly, go to 19-4**.

If you answered 18-5 **incorrectly, go to 19-4**.
If you answered 18-5 **correctly, go to 19-5**.

19-1. DILATE

   A. still

   B. widen

   C. converse

   D. contract

   E. unify

19-2. UNDAUNTED

   A. persistent

   B. timorous

   C. prepared

   D. adventurous

   E. somnolent

19-4. GLIB

   A. plaintive

   B. ominous

   C. halting

   D. didactic

   E. disparaging

19-5. VAPID

   A. loquacious

   B. engaging

   C. remarkable

   D. translatable

   E. succinct

Answers: 19-1 **D**, 19-2 **B**, 19-4 **C**, 19-5 **B**

If you answered 19-1 **incorrectly, go to 20-1**.
If you answered 19-1 **correctly, go to 20-2**.

If you answered 19-2 **incorrectly, go to 20-1**.
If you answered 19-2 **correctly, go to 20-3**.

If you answered 19-4 **incorrectly, go to 20-3**.
If you answered 19-4 **correctly, go to 20-5**.

If you answered 19-5 **incorrectly, go to 20-4**.
If you answered 19-5 **correctly, go to 20-5**.

20-1. HELMET : HEAD ::

   A. glove : mitten

   B. ring : finger

   C. goggles : eyes

   D. arrow : quiver

   E. scarf : necklace

20-2. FELONY : MISDEMEANOR ::

   A. blunder : mistake

   B. zenith : nadir

   C. hurricane : typhoon

   D. agreement : contract

   E. pause : delay

20-3. EXTRACT : QUOTATION ::

    A. radius : diameter

    B. forecast : prediction

    C. exile : solitude

    D. tropics : tundra

    E. longitude : latitude

20-4. SLOTHFUL : OVERWORK ::

    A. confused : overexplain

    B. mean : overspend

    C. average : overrate

    D. expensive : overcharge

    E. tired : overexert

20-5. WANTON : ASCETIC ::

    A. nervous : insecure

    B. fervent : furtive

    C. costly : unpaid

    D. obstreperous : shy

    E. hermetic : monkish

Answers: 20-1 **C**, 20-2 **A**, 20-3 **B**, 20-4 **B**, 20-5 **D**

Check your answers and continue to the reading passage.

Questions 21–22

I saw a spot where a cluster of trees once waved their branches on the shores of the Atlantic, when that ocean (now driven back 700 miles) came to the foot
(5) of the Andes. I saw that they had sprung from a volcanic soil which had been raised above the level of the sea, and that subsequently this dry land, with its upright trees, had been let down into the
(10) depths of the ocean. In these depths the formerly dry land was covered by sedimentary beds, and these again by enormous streams of submarine lava—one such mass attaining the thickness of
(15) 1,000 feet; and these deluges of molten stone and aqueous deposits 5 times alternately had been spread out. The ocean that received such thick masses must have been profoundly deep; but
(20) again the subterranean volcanic forces exerted themselves, and I now beheld the bed of that ocean, forming a chain of mountains more than 7,000 feet in height. The great piles of strata had been
(25) intersected by many wide valleys, and the trees, now changed into silica, were exposed projecting from the volcanic soil, now changed into rock, whence formerly, in a green and budding state,
(30) they had raised their lofty heads. Now, all is utterly irreclaimable and desert; even the lichen cannot adhere to the stony casts of former trees. Vast as such changes must ever appear, yet they have
(35) all occurred within a period recent when compared with many of the fossiliferous strata of Europe and America.

21. The author is primarily concerned with

    A. formulating a theory to account for the formation of petrified trees.

    B. describing the geography of South America.

    C. describing the formation of the Andes mountains.

    D. attesting to the power of volcanic action.

    E. explaining the history of fossils.

GO ON TO THE NEXT PAGE

22. That this passage was written in the 19th century rather than by a contemporary scientist is suggested by the

    A. use of figurative language in such phrases as *trees . . . had raised their lofty heads.*

    B. oblique references to religion throughout the passage.

    C. use of reasoning from cause and effect.

    D. comparison of one geological area with another as in the last sentence.

    E. use of such terms as *volcanic, sedimentary,* and *strata.*

Answers: 21 C, 22 A

Check your answers and continue to the next reading passage.

Questions 23–26

When the new discipline of social psychology was born at the beginning of this century, its first experiments were essentially adaptations of the suggestion

(5) demonstration. The technique generally followed a simple plan. The subjects, usually college students, were asked to give their opinions or preferences concerning various matters; some time later

(10) they were again asked to state their choices, but now they were also informed of the opinions held by authorities or large groups of their peers on the same matters. (Often the alleged con-

(15) sensus was fictitious.) Most of these studies had substantially the same result: Confronted with opinions contrary to their own, many subjects apparently shifted their judgments in the direction

(20) of the views of the majorities or the experts. The late psychologist Edward L. Thorndike reported that he had succeeded in modifying the esthetic

preferences of adults by this procedure.

(25) Other psychologists reported that people's evaluations of the merit of the literary passage could be raised or lowered by ascribing the passage to different authors. Apparently the sheer weight of

(30) numbers or authority sufficed to change opinions, even when no arguments for the opinions themselves were provided.

Now the very ease of success in these experiments arouses suspicion. Did the

(35) subjects actually change their opinions, or were the experimental victories scored only on paper? On grounds of common sense, one must question whether opinions are generally as wa-

(40) tery as these studies indicate. There is some reason to wonder whether it was not the investigators who, in their enthusiasm for a theory, were suggestible, and whether the ostensibly gullible subjects

(45) were not providing answers that they thought good subjects were expected to give.

The investigations were guided by certain underlying assumptions, which to-

(50) day are common currency and account for much that is thought and said about the operations of propaganda and public opinion. The assumptions are that people submit uncritically and painlessly to

(55) external manipulation by suggestion or prestige, and that any given idea or value can be "sold" or "unsold" without reference to its merits. We should be skeptical, however, of the supposition

(60) that the power of social pressure necessarily implies uncritical submission to it; independence and the capacity to rise above group passion are also open to human beings. Further, one may ques-

(65) tion on psychological grounds whether it is possible as a rule to change a person's judgment of a situation or an object without first changing his knowledge or assumptions about it.

23. The first experiments in social psychology appeared to demonstrate all of the following EXCEPT

   A. that many people will agree with what they believe to be the opinion held by the majority of their peers.

   B. that many people will agree with what they believe to be the opinion of experts.

   C. that many people change their opinions given good arguments for doing so.

   D. that an individual's evaluation of a literary work can be altered by ascribing the work to a different writer.

   E. that college students' opinions can be changed.

24. The author implies that persons who altered their opinion on a controversial topic have most likely done so because they

   A. have been influenced by overt social pressures.

   B. have been influenced by covert external manipulation.

   C. have learned more about the topic.

   D. have learned how experts judge the topic.

   E. are incapable of independent thought.

25. The main point of the passage is to

   A. question some assumptions about the influence of social pressures.

   B. show that a judgment of a situation cannot change without a change in the knowledge of the situation.

   C. demonstrate the gullibility of psychological investigators and their subjects.

   D. question the notion that any idea can be "sold" or "unsold."

   E. support investigations into ideas of propaganda.

26. With which of the following ideas would the author be most likely to agree?

   A. Human beings can be programmed like machines.

   B. Women are more likely to agree with men than with other women.

   C. Women are more likely to agree with other women than with men.

   D. Like men, women are capable of independent thought.

   E. Like women, men submit uncritically to external manipulation.

Answers: 23 C, 24 C, 25 A, 26 D

If you answered **none of the 4 reading questions correctly, go to 27-1**.

If you answered **1 of the 4 reading questions correctly, go to 27-2**.

If you answered **2 of the 4 reading questions correctly, go to 27-3**.

If you answered **3 of the 4 reading questions correctly, go to 27-4**.

If you answered **all 4 of the reading questions correctly, go to 27-5**.

27-1. Despite its staid appearance, the Mexican Stock Exchange is the most _____ in North America.

    A. inactive

    B. volatile

    C. obscure

    D. conservative

    E. efficient

27-2. Phoenician seamen were primarily interested in commerce and may have been the first people to _____ Africa.

    A. circumnavigate

    B. demystify

    C. explore

    D. mispronounce

    E. expropriate

27-3. When thrust into an unknown world, people are careful to note the conditions in which they find themselves, _____ them with their _____.

    A. bemusing . . . daydreams

    B. refuting . . . expertise

    C. congealing . . . observations

    D. concurring . . . thoughts

    E. comparing . . . expectations

27-4. Another _____ function of the political institution is the protection of the society from _____ forces.

    A. expendable . . . natural

    B. inherent . . . natural

    C. conservative . . . governmental

    D. liberal . . . conservative

    E. salient . . . external

27-5. In _____ nature, myths use _____ reasoning, relating the unfamiliar to the familiar by means of likeness.

    A. observing . . . logical

    B. appreciating . . . irrational

    C. disclosing . . . metonymic

    D. interpreting . . . analogical

    E. seizing . . . fanciful

Answers: 27-1 **B**, 27-2 **A**, 27-3 **E**, 27-4 **E**, 27-5 **D**

If you answered 27-1 **incorrectly, go to 28-1**.
If you answered 27-1 **correctly, go to 28-2**.

If you answered 27-2 **incorrectly, go to 28-1**.
If you answered 27-2 **correctly, go to 28-3**.

If you answered 27-3 **incorrectly, go to 28-2**.
If you answered 27-3 **correctly, go to 28-4**.

If you answered 27-4 **incorrectly, go to 28-3**.
If you answered 27-4 **correctly, go to 28-5**.

If you answered 27-5 **incorrectly, go to 28-4**.
If you answered 27-5 **correctly, go to 28-5**.

28-1. SERRATED

    A. dull

    B. conical

    C. smooth

    D. tender

    E. open to the air

28-2. EQUIVOCAL

    A. unequal

    B. silent

    C. untruthful

    D. certain

    E. autumnal

28-3. FERAL

    A. deteriorated

    B. domesticated

    C. elevated

    D. repatriated

    E. emaciated

28-4. PENURY

    A. wealth

    B. penance

    C. pensiveness

    D. impenetrability

    E. indifference

28-5. FEALTY

    A. insensitivity

    B. unhappiness

    C. torpor

    D. indecision

    E. infidelity

Answers: 28-1 **C**, 28-2 **D**, 28-3 **B**, 28-4 **A**, 28-5 **E**

If you answered 28-1 **incorrectly, go to 29-1**.
If you answered 28-1 **correctly, go to 29-2**.

If you answered 28-2 **incorrectly, go to 29-1**.
If you answered 28-2 **correctly, go to 29-3**.

If you answered 28-3 **incorrectly, go to 29-2**.
If you answered 28-3 **correctly, go to 29-4**.

If you answered 28-4 **incorrectly, go to 29-3**.
If you answered 28-4 **correctly, go to 29-5**.

If you answered 28-5 **incorrectly, go to 29-4**.
If you answered 28-5 **correctly, go to 29-5**.

29-1. COALESCE

    A. separate

    B. liquefy

    C. improve upon

    D. inflame

    E. relax

29-2. SERVILE

    A. uninhibited

    B. catlike

    C. gauche

    D. undivided

    E. arrogant

29-3. COGNATE

    A. ignorant

    B. intestate

    C. well-known

    D. unrelated

    E. inscrutable

29-4. MORBID

    A. alive

    B. hale

    C. salutary

    D. calm

    E. enraged

29-5. MACULATE

    A. undefiled

    B. dried

    C. hopeless

    D. commonplace

    E. severed

Answers: 29-1 **A**, 29-2 **E**, 29-3 **D**, 29-4 **B**, 29-5 **A**

If you answered 29-1 **incorrectly, go to 30-1**.
If you answered 29-1 **correctly, go to 30-2**.

If you answered 29-2 **incorrectly, go to 30-1**.
If you answered 29-2 **correctly, go to 30-3**.

If you answered 29-3 **incorrectly, go to 30-2**.
If you answered 29-3 **correctly, go to 30-4**.

If you answered 29-4 **incorrectly, go to 30-3**.
If you answered 29-4 **correctly, go to 30-5**.

If you answered 29-5 **incorrectly, go to 30-4**.
If you answered 29-5 **correctly, go to 30-5**.

30-1. ZEALOT : ENTHUSIASTIC ::

    A. prisoner : sullen

    B. lawyer : honest

    C. banker : moneyed

    D. idler : lazy

    E. runner : speedy

30-2. CANDY : SUGAR ::

    A. pickle : brine

    B. distill : spirits

    C. fry : fricassee

    D. harvest : crop

    E. broil : lobster

30-3. BIBLIOGRAPHER : LIBRARY ::

    A. orange : grove

    B. lawyer : jail

    C. carpenter : wood

    D. teacher : classroom

    E. bishop : see

30-4. BELLWETHER : FLOCK ::

    A. lion : pride

    B. election : plebiscite

    C. preamble : afterthought

    D. goose : gosling

    E. foreman : crew

30-5. VERBIAGE : PROLIX ::

    A. star : solar

    B. fertility : fecund

    C. environment : sullied

    D. action : verbal

    E. value : expensive

Answers: 30-1 **D**, 30-2 **A**, 30-3 **D**, 30-4 **E**, 30-5 **B**

IF YOU FINISH BEFORE TIME IS CALLED, CHECK YOUR WORK ON THIS SECTION ONLY. DO NOT WORK ON ANY OTHER SECTION IN THE TEST.

STOP

QUANTITATIVE SECTION

General Directions: Your score on the quantitative section will be based on how well you do on the questions presented and also on the number of questions you answer. You should try to pace yourself so that you have sufficient time to consider every question. If possible, answer all 28 questions in this section. Guess if you need to. Select the best answer choice for each question.

Note: Because you are checking answers as you go on this simulated GRE CBT, you should add about 5 or 10 minutes to your testing time.

Numbers: All numbers used are real numbers.

Figure: Figures are intended to provide useful positional information, but are not necessarily drawn to scale. Unless a note states that a figure is drawn to scale, you should not solve these problems by estimating sizes or by measurement. Use your knowledge of math to solve the problems.

Angle measures can be assumed to be positive.

Lines that appear straight can be assumed straight.

Unless otherwise indicated, figures lie in a plane.

Directions: You are given two quantities, one in Column A and one in Column B. You are to compare the two quantities and choose oval

A if the quantity in Column A is greater;

B if the quantity in Column B is greater;

C if the two quantities are equal;

D if the relationship cannot be determined from the information given.

Common Information: Information centered above both columns refers to one or both columns. A symbol that appears in both columns represents the same thing in each column.

Directions: Math Ability

Solve each problem in this section by using the information given and your own mathematical calculations. Then select the correct answer of the five choices given. Use the scratch paper given for any necessary calculations.

Remember that on the actual exam the answer choices will not be lettered. You will simply select the oval next to your choice.

1-3

Column A	Column B
Number of ways to arrange four books on a shelf	12

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

Answer 1-3 **A**

If you answered 1-3 **incorrectly, go to 2-2**.
If you answered 1-3 **correctly, go to 2-4**.

2-2

Column A	Column B
Number of integer multiples of 8, greater than 8, but less than 50	Number of integer multiples of 6, greater than 6, but less than 40

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

2-4

Column A	Column B
$1 + \dfrac{1}{2} + \dfrac{1}{4} + \dfrac{1}{16} + \dfrac{1}{32} + \dfrac{1}{64}$	2

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

Answers: 2-2 **C**, 2-4 **B**

If you answered 2-2 i**ncorrectly, go to 3-1**.

If you answered 2-2 **correctly, go to 3-3**.

If you answered 2-4 **incorrectly, go to 3-3**.
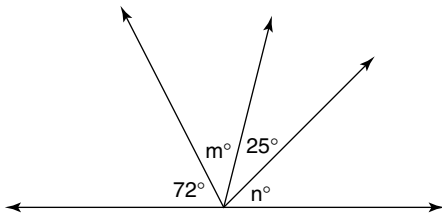
If you answered 2-4 **correctly, go to 3-5**.

3-1 $x^2 = 36$

Column A | Column B
6 | x

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

3-3 $x > 0$

Column A | Column B
$3x^2$ | $2x^3$

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

3-5 $x > y > 0$

Column A | Column B
$\sqrt{x} - \sqrt{y}$ | $\sqrt{x - y}$

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

Answers: 3-1 **D**, 3-3 **D**, 3-5 **B**

If you answered 3-1 **incorrectly, go to 4-1**.
If you answered 3-1 **correctly, go to 4-2**.

If you answered 3-3 **incorrectly, go to 4-2**.
If you answered 3-3 **correctly, go to 4-4**.

If you answered 3-5 **incorrectly, go to 4-4**.
If you answered 3-5 **correctly, go to 4-5**.

4-1 What is .25% of 12?

A. $3/100$

B. $3/10$

C. $1/3$

D. 3

E. 300

GO ON TO THE NEXT PAGE

4-2 If 15 students in a class average 80% on an English exam and 10 students average 90% on the same exam, what is the average in percent of all 25 students?

   A. $86\frac{2}{3}\%$

   B.   85%

   C.   84%

   D. $83\frac{1}{2}\%$

   E.   83%

4-4 A bag contains 20 gumballs. If there are 8 red, 7 white, and 5 green, what is the minimum number of gumballs one must pick from the bag to be assured of one of each color?

   A.   16

   B.   9

   C.   8

   D.   6

   E.   3

4-5 The denominator of a fraction is 5 greater than the numerator. If the numerator and the denominator are increased by 2, the resulting fraction is equal to $\frac{7}{12}$. What is the value of the original value of the original fraction?

   A. $\frac{5}{12}$

   B. $\frac{1}{2}$

   C. $\frac{9}{14}$

   D. $\frac{2}{3}$

   E. $\frac{12}{17}$

Answers: 4-1 **A**, 4-2 **C**, 4-4 **A**, 4-5 **B**

If you answered 4-1 **incorrectly, go to 5-1**.
If you answered 4-1 **correctly, go to 5-2**.

If you answered 4-2 **incorrectly, go to 5-1**.
If you answered 4-2 **correctly, go to 5-3**.

If you answered 4-4 **incorrectly, go to 5-3**.
If you answered 4-4 **correctly, go to 5-5**.

If you answered 4-5 **incorrectly, go to 5-4**.
If you answered 4-5 **correctly, go to 5-5**.

5-1
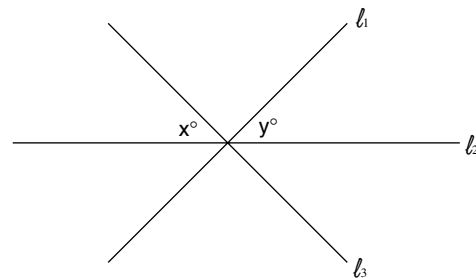
Column A	Column B
x	y

   A.   The quantity in Column A is greater.

   B.   The quantity in Column B is greater.

   C.   The quantities are equal.

   D.   The relationship cannot be determined from the information given.

5-2

92°

3   3

y°

x
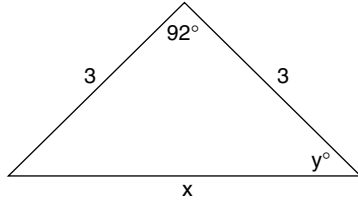
Column A	Column B
y	43°

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

5-3

Column A	Column B
Number of diagonals in a hexagon	Number of sides of a hexagon

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

5-4

92°

3   3

y°

x
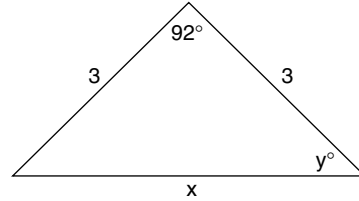
Column A	Column B
x	$3\sqrt{2}$

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

5-5   ABCD is a rhombus with height 4 and area 20.

Column A	Column B
Length of side AB	Length of diagonal AC

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

Quantitative Section

6-1

In the figure, what is the number of degrees in the sum of m + n?

A. 83

B. 93

C. 97

D. 103

E. Cannot be determined

6-2

In the figure, all line segments meet at right angles, and each segment has a length of x. What is the area of the figure in terms of x?

A. $25x^2$

B. $35x^2$

C. $36x^2$

D. $41x^2$

E. $45x^2$

6-3
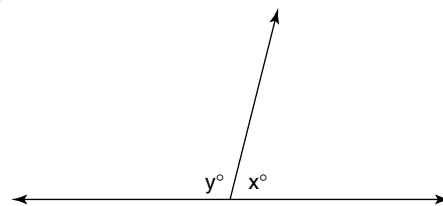
If in the figure $x = \frac{2}{3}y$, then y =

A. 36

B. 72

C. 108

D. 144

E. Cannot be determined

6-4 What is the area of a square inscribed in a circle whose circumference is 16π?

  A.   8
  B.   32
  C.   64
  D. 128
  E. 256

6-5
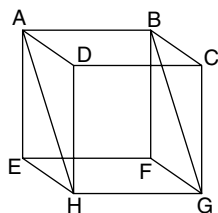
In the cube above, AH and BG are diagonals and the surface area of side ABFE is 16. What is the area of rectangle ABGH?

  A. $4\sqrt{2}$
  B. 16
  C. $16+\sqrt{2}$
  D. $16\sqrt{2}$
  E. $15\sqrt{3}$

Answers: 6-1 **A**, 6-2 **D**, 6-3 **C**, 6-4 **D**, 6-5 **D**

If you answered 6-1 **incorrectly, go to 7-1**.
If you answered 6-1 **correctly, go to 7-2**.

If you answered 6-2 **incorrectly, go to 7-1**.
If you answered 6-2 **correctly, go to 7-3**.

If you answered 6-3 **incorrectly, go to 7-2**.
If you answered 6-3 **correctly, go to 7-4**.

If you answered 6-4 **incorrectly, go to 7-3**.
If you answered 6-4 **correctly, go to 7-5**.

If you answered 6-5 **incorrectly, go to 7-4**.
If you answered 6-5 **correctly, go to 7-5**.

7-1

Column A   Column B
$x + 4$ $y - 3$

  A. The quantity in Column A is greater.
  B. The quantity in Column B is greater.
  C. The quantities are equal.
  D. The relationship cannot be determined from the information given.

7-2
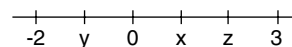
x, y, z are integers

Column A   Column B
$z - x$ $x - y$

  A. The quantity in Column A is greater.
  B. The quantity in Column B is greater.
  C. The quantities are equal.
  D. The relationship cannot be determined from the information given.

7-3

x is 30% of 60

20% of y is 4

Column A   Column B

x   y

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

7-4

$x > 0$

Column A   Column B

$x(x + 2) + (x + 2)$ $(x + 1)(x + 3)$

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

7-5

Column A   Column B

$x^2 + 2x + 1 = 0$ $y^2 - 2y + 1 = 0$

x   y

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

Answers: 7-1 **D**, 7-2 **B**, 7-3 **B**, 7-4 **B**, 7-5 **B**

If you answered 7-1 **incorrectly, go to 8-1**.
If you answered 7-1 **correctly, go to 8-2**.

If you answered 7-2 **incorrectly, go to 8-1**.
If you answered 7-2 **correctly, go to 8-3**.

If you answered 7-3 **incorrectly, go to 8-2**.
If you answered 7-3 **correctly, go to 8-4**.

If you answered 7-4 **incorrectly, go to 8-3**.
If you answered 7-4 **correctly, go to 8-5**.

If you answered 7-5 **incorrectly, go to 8-4**.
If you answered 7-5 **correctly, go to 8-5**.

8-1 Bob is older than Jane, but he is younger than Jim. If Bob's age is b, Jane's age is c, and Jim's age is d, then which of the following is true?

    A. $c < b < d$

    B. $b < c < d$

    C. $b < d < c$

    D. $c < d < b$

    E. $d < c < b$

8-2 If $\frac{2}{x} = 4$ and $\frac{2}{y} = 8$, then $x - y =$

    A. $\frac{1}{8}$

    B. $\frac{1}{4}$

    C. $\frac{3}{4}$

    D. 4

    E. 24

8-3 If $\frac{a}{b} = \frac{c}{d}$ and a, b, c, and d are positive integers, then which of the following is true?

    A. $\frac{a}{b} = \frac{d}{c}$

    B. $ac = bd$

    C. $a + d = b + c$

    D. $\frac{d}{b} = \frac{c}{a}$

    E. $\frac{a}{d} = \frac{c}{b}$

8-4 If a and b are integers, which of the following conditions is sufficient for $\dfrac{a^2-b^2}{a-b}=a+b$ to be true?

   A. $a>0$

   B. $a<0$

   C. $a>b$

   D. $b>0$

   E. $b<0$

8-5 If the average of two numbers is y, and one of the numbers is equal to z, then the other number is equal to

   A. $2z-y$

   B. $\dfrac{y+z}{2}$

   C. $z-y$

   D. $2y-z$

   E. $y+2z$

Answers: 8-1 **A**, 8-2 **B**, 8-3 **D**, 8-4 **C**, 8-5 **D**

If you answered 8-1 **incorrectly, go to 9-1**.
If you answered 8-1 **correctly, go to 9-2**.

If you answered 8-2 **incorrectly, go to 9-1**.
If you answered 8-2 **correctly, go to 9-3**.

If you answered 8-3 **incorrectly, go to 9-2**.
If you answered 8-3 **correctly, go to 9-4**.

If you answered 8-4 **incorrectly, go to 9-3**.
If you answered 8-4 **correctly, go to 9-5**.

If you answered 8-5 **incorrectly, go to 9-4**.
If you answered 8-5 **correctly, go to 9-5**.

9-1

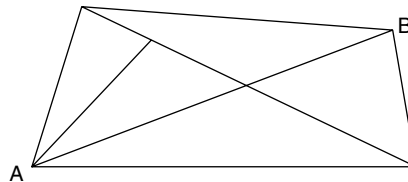| Column A	Column B
35% of 50	50% of 35

   A. The quantity in Column A is greater.

   B. The quantity in Column B is greater.

   C. The quantities are equal.

   D. The relationship cannot be determined from the information given.

9-2

Column A	Column B
$3^2+4\times10^2-4^2$	$3^2-4\times10^2-4^2$

   A. The quantity in Column A is greater.

   B. The quantity in Column B is greater.

   C. The quantities are equal.

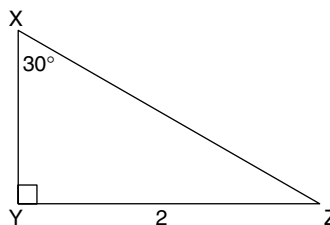   **D.** The relationship cannot be determined from the information given.

9-3

Column A	Column B
$(.11)^{100}$	$(1.1)^{10}$

   A. The quantity in Column A is greater.

   B. The quantity in Column B is greater.

   C. The quantities are equal.

   D. The relationship cannot be determined from the information given.

Quantitative Section

9-4

Column A   Column B

Number of inches   Number of minutes
in one mile   in one year

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

9-5 A fair deck of 52 playing cards contains 4 suits: diamonds, spades, hearts, and clubs. Each suit contains 13 cards.

Column A   Column B

Without replacing   Without replacing
any cards drawn,   any cards drawn,
the probability of   the probability of
randomly drawing   randomly drawing
two diamonds in   a heart, a club,
a row   and a spade, but
                                 not necessarily in
                                 that order

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

Answers: 9-1 **C**, 9-2 **A**, 9-3 **B**, 9-4 **B**, 9-5 **B**

If you answered 9-1 **incorrectly, go to 10-1**.
If you answered 9-1 **correctly, go to 10-2**.

If you answered 9-2 **incorrectly, go to 10-1**.
If you answered 9-2 **correctly, go to 10-3**.

If you answered 9-3 **incorrectly, go to 10-2**.
If you answered 9-3 **correctly, go to 10-4**.

If you answered 9-4 **incorrectly, go to 10-3**.
If you answered 9-4 **correctly, go to 10-5**.

If you answered 9-5 **incorrectly, go to 10-4**.
If you answered 9-5 **correctly, go to 10-5**.

10-1 $0 < x + y < 2$

Column A   Column B

x   y

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

10-2

Column A   Column B

$(x^2y^3)^8$ $(x^4y^6)^4$

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

10-3

$$a = 3b$$

$$b = -2$$

Column A	Column B
$\dfrac{a^2 + b}{ab}$	$\dfrac{a + b^2}{ab}$

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

10-4

Column A	Column B
$\dfrac{\sqrt{3}}{3}$	$\dfrac{1}{\sqrt{3}}$

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

10-5

Column A	Column B
$8^{29} - 8^{28}$	8^{28}

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

Answers: 10-1 **D**, 10-2 **C**, 10-3 **A**, 10-4 **C**, 10-5 **A**

If you answered 10-1 **incorrectly, go to 11-1**.
If you answered 10-1 **correctly, go to 11-2**.

If you answered 10-2 **incorrectly, go to 11-1**.
If you answered 10-2 **correctly, go to 11-3**.

If you answered 10-3 **incorrectly, go to 11-2**.
If you answered 10-3 **correctly, go to 11-4**.

If you answered 10-4 **incorrectly, go to 11-3**.
If you answered 10-4 **correctly, go to 11-5**.

If you answered 10-5 **incorrectly, go to 11-4**.
If you answered 10-5 **correctly, go to 11-5**.

11-1

Column A	Column B
Area of rectangle with length 8	Area of rectangle with width 7

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

Quantitative Section

GO ON TO THE NEXT PAGE

11-2
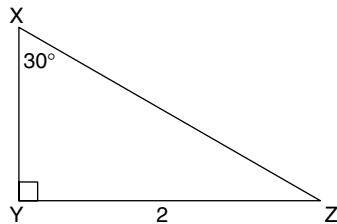
Column A   Column B

XY   YZ

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

11-3

Column A   Column B

Volume of cube   Volume of rec-
with side 6   tangular prism
                  with two dimen-
                  sions less than 6

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

11-4

Column A   Column B

Number of ways   7
to travel from A to B
(without going over
a line more than once
on any one attempt)

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

11-5

Column A   Column B

XY $3\sqrt{2}$

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

12-1 If $x = -2$, then $x^3 - x^2 - x - 1 =$

   A. -15

   B. -11

   C. -3

   D. 0

   E. 13

12-2 If x is between 0 and 1, which of the following statements is (are) true?

   I. $x^2 > 1$

  II. $x^2 > 0$

 III. $x^2 > x$

   A. I only

   B. II only

   C. III only

   D. I and II only

   E. II and III only

12-3 If $x - 4 = y$, what must $(y - x)^3$ equal?

   A. -64

   B. -12

   C. 12

   D. 64

   E. Cannot be determined

12-4 If $(a,b) \otimes (c,d) = (ac - bd, ad)$ then $(-2,3) \otimes (4,-1) =$

   A. $(-5,2)$

   B. $(-5,-2)$

   C. $(-11,2)$

   D. $(-11,-2)$

   E. $(-5,-3)$

12-5 A bus leaves from Burbank at 9:00 a.m., traveling east at 50 miles per hour. At 1:00 p.m., a plane leaves Burbank traveling east at 300 miles per hour. At what time will the plane overtake the bus?

   A. 12:45 p.m.

   B. 1:10 p.m.

   C. 1:40 p.m.

   D. 1:48 p.m.

   E. 1:55 p.m.

GO ON TO THE NEXT PAGE

Team-LRN

13-1

Column A	Column B
5%	$\dfrac{1}{20}$

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

13-2

Column A	Column B
$5 + 4 \cdot 10^2 + 8 \cdot 10^3$	8405

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

13-3

Column A	Column B
$3\sqrt{2}$	$\sqrt{17}$

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

13-4

$$x^4 - 1 = 0$$

Column A	Column B
x	x^2

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

13-5

$$x = \frac{4 - y}{y}$$

$$y \neq 0$$
$$x \neq -1$$
$$x \neq 0$$

Column A	Column B
y	$\dfrac{4}{x + 1}$

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

Answers: 13-1 **C**, 13-2 **C**, 13-3 **A**, 13-4 **D**, 13-5 **C**

Check your answers and continue to the next problem.

Questions 14–15 refer to the graph.

**Maximum Temperature Readings
Los Angeles: July 10-16, 1979**
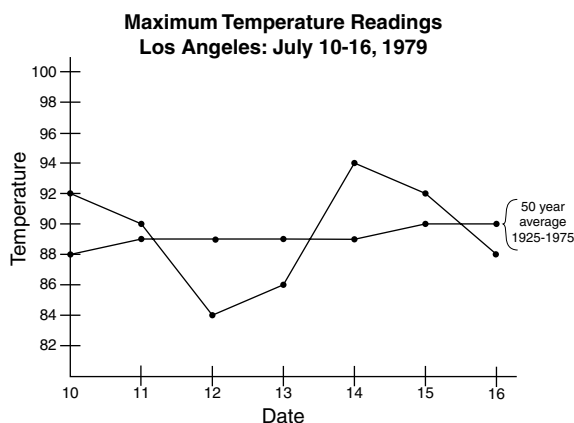
14. What was the percent increase in the maximum temperature from July 12 to July 14, 1979?

A. 10

B. 10.6

C. 11.9

D. 84

E. 94

15. According to the graph, the average maximum temperature in Los Angeles for the week of July 10 to 16, 1979, was

A. much less than the 50-year average for 1925–1975.

B. approximately equal to the 50-year average for 1925–1975.

C. much greater than the 50-year average for 1925–1975.

D. greater than any individual maximum reading for all dates given.

E. less than any individual maximum reading for all dates given.

Answers: 14 **C**, 15 **B**

If you answered **none of the two graph questions correctly, go to 16-1**.

If you answered **one of the two graph questions correctly, go to 16-3**.

If you answered **both of the graph questions correctly, go to 16-5**.

16-1   a,b,c, all greater than 0

Column A	Column B
$(b + c)a$	$ac + ab$

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

16-3 $x < y$

Column A	Column B
$(x - y)^2$	$x^2 - y^2$

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

GO ON TO THE NEXT PAGE

16-5 Column A   Column B

$$1 > x > 0$$

x^{-2} x^{-3}

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.
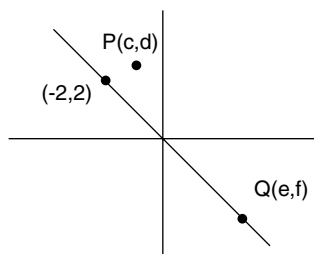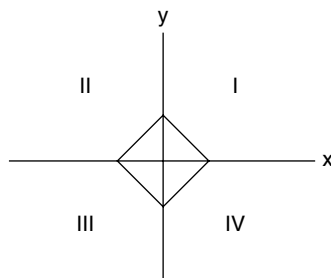

Answers: 16-1 **C**, 16-3 **D**, 16-5 **B**

If you answered 16-1 **incorrectly, go to 17-1**.
If you answered 16-1 **correctly, go to 17-2**.

If you answered 16-3 **incorrectly, go to 17-2**.
If you answered 16-3 **correctly, go to 17-4**.

If you answered 16-5 **incorrectly, go to 17-4**.
If you answered 16-5 **correctly, go to 17-5**.

17-1

Column A   Column B
$66\frac{2}{3}$ 66.66

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

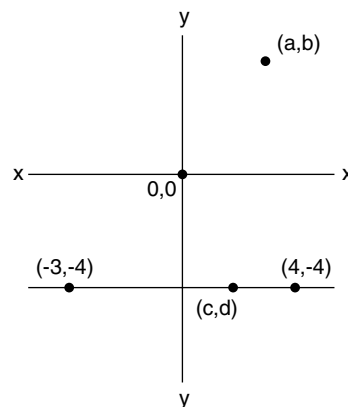**D.** The relationship cannot be determined from the information given.

17-2

Column A   Column B

$\dfrac{1}{71} - \dfrac{1}{151}$ $\dfrac{1}{65} - \dfrac{1}{153}$

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

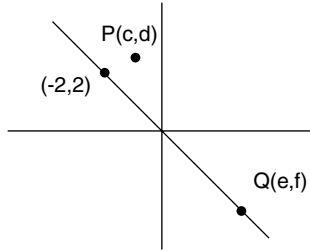**D.** The relationship cannot be determined from the information given.

17-4 A house is offered at $120,000 but sold at $115,000. The realtor makes a 6% commission.

Column A   Column B
Percent drop in   Realtor's
price of house   commission as
                         a percent

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

**D.** The relationship cannot be determined from the information given.

17-5 For all real numbers, $p\#q = \dfrac{p^2}{q}$

Column A   Column B
Value of $p\#q$ q
if $p = -q$

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

18-1 If $2x - 5 = 9$, then $3x + 2 =$

    A.   7

    B.   14

    C.   16

    D.   23

    E.   44

18-2 What is the ratio of $\frac{3}{10}$ to $\frac{5}{8}$?

    A. $\frac{3}{16}$

    B. $\frac{12}{25}$

    C. $\frac{37}{40}$

    D. $\frac{25}{12}$

    E. $\frac{16}{3}$

18-3 If $a = p + prt$, then $r =$

    A. $\frac{(a-1)}{t}$

    B. $\frac{(a-p)}{pt}$

    C. $a - p - pt$

    D. $\frac{a}{t}$

    E. $\frac{(a+p)}{pt}$

18-4 If the ratio of x to y is $\frac{3}{4}$ and the ratio of y to z is $\frac{12}{13}$, the ratio of x to z is

    A. $\frac{3}{13}$

    B. $\frac{4}{13}$

    C. $\frac{1}{3}$

    D. $\frac{9}{13}$

    E. $\frac{12}{13}$

18-5 If a pipe can drain a tank in t hours, what part of the tank does it drain in 3 hours?

    A.   3t

    B. $\frac{1}{3}$

    C. $t + 3$

    D. $\frac{3}{t}$

    E. $t - 3$

Quantitative Section

GO ON TO THE NEXT PAGE

19-1

Column A

a

Column B

b

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

19-2

Column A

c

Column B

d

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

19-3

Point (x,y) is a point in quadrant III on the quadrilateral

Column A

x

Column B

y

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

19-4

Column A

c + d

Column B

a + b

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

19-5

P(c,d)

(-2,2)

Q(e,f)

Column A	Column B
c + d	e + f

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

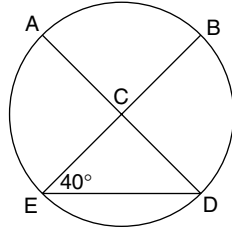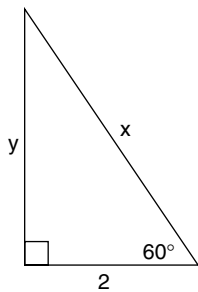**D.** The relationship cannot be determined from the information given.

Answers: 19-1 **D**, 19-2 **B**, 19-3 **D**, 19-4 **B**, 19-5 **A**

Check your answers and continue to the graph questions.

Questions 20–21 refer to the graph.

U.S. AUTO SALES–1978
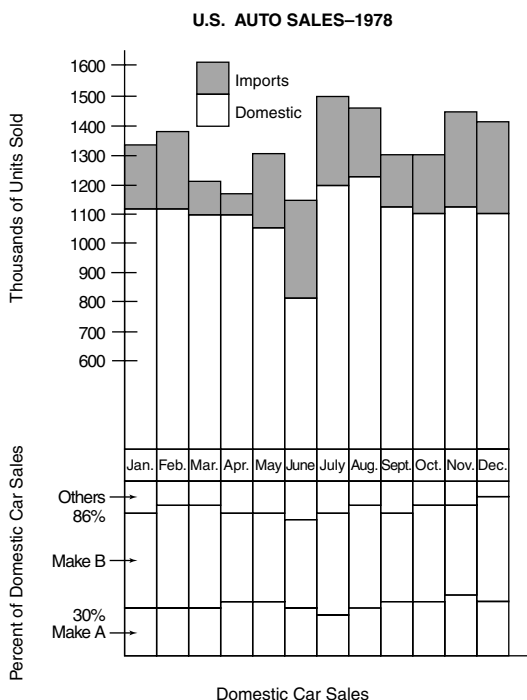
20. Approximately how many cars of make B were sold in July?

A. 732,000

B. 800,000

C. 900,000

D. 1,049,200

E. 1,290,000

21. In which of the following months was the domestic-to-imports auto sales ratio the greatest?

A. January

B. March

C. September

D. October

E. December

Answers: 20 **A**, 21 **C**

If you answered **none of the two preceding questions correctly, go to 22-1**.

If you answered **one of the two preceding questions correctly, go to 22-2**.

If you answered **both of the preceding questions correctly, go to 22-3**.

22-1
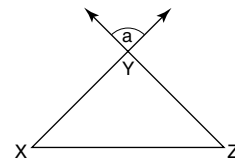
In $\triangle XYZ$, $XY = 10$, $YZ = 10$, and $\angle a = 84°$. What is the degree measure of $\angle z$?

A. 42°

B. 48°

C. 84°

D. 96°

E. Cannot be determined

GO ON TO THE NEXT PAGE

22-3 The base of an isosceles triangle exceeds each of the equal sides by 8 feet. If the perimeter is 89 feet, what is the length of the base in feet?

A. 27

B. 29⅔

C. 35

D. 54

E. 70

22-5
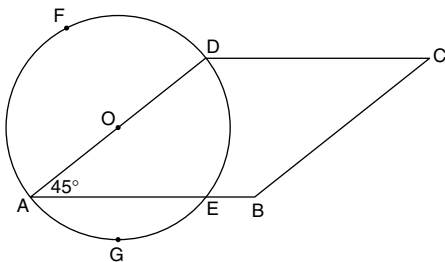
In the rhombus, BC = 6, AE ≅ 4, and angle DAE = 45°. AD is the diameter of the circle. If a man started at C and followed around the outer edge of this figure to D, F, A, G, E, B, and back to C, approximately how far did he travel?

A. $14 + 6\pi$

B. $14 + {}^{9\pi}\!/_2$

C. $14 + {}^{27\pi}\!/_4$

D. $12 + 6\pi$

E. $12 + {}^{9\pi}\!/_2$

Answers: 22-1 **B**, 22-3 **C**, 22-5 **B**

If you answered 22-1 **incorrectly**, go to **23-1**.
If you answered 22-1 **correctly**, go to **23-2**.

If you answered 22-3 **incorrectly**, go to **23-2**.
If you answered 22-3 **correctly**, go to **23-4**.

If you answered 22-5 **incorrectly**, go to **23-4**.
If you answered 22-5 **correctly**, go to **23-5**.

23-1
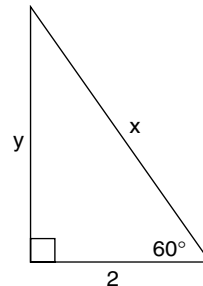
Column A	Column B
x	y

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

23-2
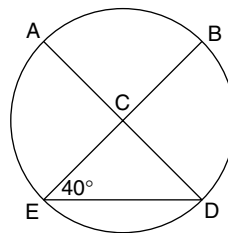
Column A	Column B
∠CED	½$\overset{\frown}{BD}$

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

Team-LRN

23-4

Column A	Column B
∠BCD	∠CDE

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

23-5

Column A	Column B
2	$\dfrac{x}{2}$

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

Answers: 23-1 **A**, 23-2 **C**, 23-4 **A**, 23-5 **C**

If you answered 23-1 **incorrectly, go to 24–1**.
If you answered 23-1 **correctly, go to 24–2**.

If you answered 23-2 **incorrectly, go to 24–1**.
If you answered 23-2 **correctly, go to 24–3**.

If you answered 23-4 **incorrectly, go to 24–3**.
If you answered 23-4 **correctly, go to 24–5**.

If you answered 23-5 **incorrectly, go to 24–4**.
If you answered 23-5 **correctly, go to 24–5**.

24-1 $\qquad 2x + 5y > 4$

Column A	Column B
x	y

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

24-2 $\qquad x < 0$

Column A	Column B
$x^3 - 1$	0

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

Quantitative Section

GO ON TO THE NEXT PAGE

24-3 $x^2 + 2x + 1 = 0$

Column A   Column B

$(x + 1)(x + 1)$ $(x - 1)(x - 1)$

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

24-4 $5x + y = 2$

$x + 3y = 6$

Column A   Column B

x   y

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

24-5 $n \neq 0$

$n \neq -\dfrac{1}{2}$

$n \neq -1$

Column A   Column B

$\dfrac{1}{1 + \frac{1}{1 + \frac{1}{n}}}$ $\dfrac{n + 1}{2n + 1}$

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

Answers: 24-1 **D**, 24-2 **B**, 24-3 **B**, 24-4 **B**, 24-5 **C**

If you answered 24-1 **incorrectly, go to 25-1**.
If you answered 24-1 **correctly, go to 25-2**.

If you answered 24-2 **incorrectly, go to 25-1**.
If you answered 24-2 **correctly, go to 25-3**.

If you answered 24-3 **incorrectly, go to 25-2**.
If you answered 24-3 **correctly, go to 25-4**.

If you answered 24-4 **incorrectly, go to 25-3**.
If you answered 24-2 **correctly, go to 25-5**.

If you answered 24-5 **incorrectly, go to 25-4**.
If you answered 24-5 **correctly, go to 25-5**.

25-1

Column A   Column B

$\sqrt{48}$ 7

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

25-2

Column A   Column B

$\dfrac{1}{3} \times \dfrac{2}{5} \times 1$ $.33 \times .4 \times .125$

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

25-3 Alice is taller than Hilda,
Joan is taller than Alice,
and Jill is taller than Hilda.

Column A   Column B

Jill's height   Joan's height

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

25-4 Tom is 3 inches shorter than Dionne.
Joy is 4 inches shorter than Daniel.
Dionne is 1 inch shorter than Daniel.

Column A   Column B

Joy's height   Tom's height

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

25-5 Column A   Column B

$\sqrt{3^{18}}$ $\left(\sqrt{27^3}\right)^2$

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

Answers: 25-1 **B**, 25-2 **A**, 25-3 **D**, 25-4 **C**, 25-5 **C**

If you answered 25-1 **incorrectly, go to 26-1**.
If you answered 25-1 **correctly, go to 26-2**.

If you answered 25-2 **incorrectly, go to 26-1**.
If you answered 25-2 **correctly, go to 26-3**.

If you answered 25-3 **incorrectly, go to 26-2**.
If you answered 25-3 **correctly, go to 26-4**.

If you answered 25-4 **incorrectly, go to 26-3**.
If you answered 25-4 **correctly, go to 26-5**.

If you answered 25-5 **incorrectly, go to 26-4**.
If you answered 25-5 **correctly, go to 26-5**.

26-1 If $3x + 2y = 10$, then $9x + 6y =$

A. $3\frac{1}{3}$

B. 15

C. 25

D. 30
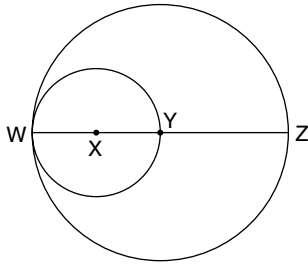
E. 35

26-2
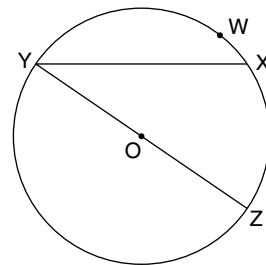
On the circle with O, arc YWX equals 100 degrees. What is the degree measure of $\angle XYZ$?

A. 40°

B. 50°

C. 80°
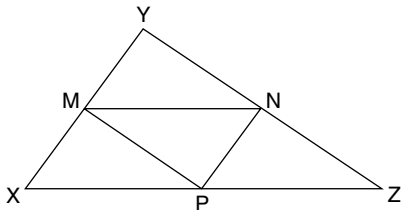
D. 100°

E. 130°

GO ON TO THE NEXT PAGE

26-3

In the figure, X and Y are the centers of the two circles. If the area of the larger circle is 144π, what is the area of the smaller circle?

A. 72π

B. 36π

C. 24π

D. 12π

E. 12

26-4

In ΔXYZ, points M, N, and P are midpoints. If XY = 10, YZ = 15, and XZ = 17, what is the perimeter of ΔMNP?

A. 10⅔

B. 14

C. 16

D. 21

F. Cannot be determined

26-5 If the volume and the total surface area of a cube are equal, how long must the edge of the cube be?

A. 2 units

B. 3 units

C. 4 units

D. 5 units

E. 6 units

Answers: 26-1 **D**, 26-2 **A**, 26-3 **B**, 26-4 **D**, 26-5 **E**

If you answered 26-1 **incorrectly, go to 27-1**.
If you answered 26-1 **correctly, go to 27-2**.

If you answered 26-2 **incorrectly, go to 27-1**.
If you answered 26-2 **correctly, go to 27-3**.

If you answered 26-3 **incorrectly, go to 27-2**.
If you answered 26-3 **correctly, go to 27-4**.

If you answered 26-4 **incorrectly, go to 27-3**.
If you answered 26-4 **correctly, go to 27-5**.

If you answered 26-5 **incorrectly, go to 27-4**.
If you answered 26-5 **correctly, go to 27-5**.

27-1 A dealer purchased 85 watches at $23 each and sold them at a profit of $47 on each watch. What was the dealer's gross income on the watches?

A. $1955

B. $3995

C. $5950

D. $6800

E. $6950

27-2 When a certain integer J is divided by 5, the remainder is 1. When integer J is divided by 3, the remainder is 2. The value for J is

 A. 6

 B. 11

 C. 12

 D. 16

 E. 21

27-3 If it takes 18 minutes to fill ⅔ of a container, how long will it take to fill the rest of the container at the same rate?

 A. 6 minutes

 B. 9 minutes

 C. 12 minutes

 D. 27 minutes

 E. 36 minutes

27-4 What is the value of

$$3 + \cfrac{3}{3 + \cfrac{3}{3 + \cfrac{3}{3 + 3}}}$$

 A. $3^{23}/_{27}$

 B. $3^{7}/_{9}$

 C. $3^{19}/_{27}$

 D. $3^{17}/_{27}$

 E. $3^{5}/_{9}$

27-5 Of 30 adults, exactly 15 are college graduates, exactly 10 are exchange students, and exactly 8 are multilingual. Only 3 college graduates are multilingual exchange students, and only 4 non-college graduates are multilingual exchange students. In this group, a person who is a college graduate may be both multilingual and an exchange student but not one or the other alone. How many of the 30 adults are not college graduates, multilingual, or exchange students?

 A. 4

 B. 5

 C. 6

 D. 7

 E. 8

Answers: 27-1 **C**, 27-2 **C**, 27-3 **B**, 27-4 **B**, 27-5 **D**

If you answered 27-1 **incorrectly, go to 28-1**.
If you answered 27-1 **correctly, go to 28-2**.

If you answered 27-2 **incorrectly, go to 28-1**.
If you answered 27-2 **correctly, go to 28-3**.

If you answered 27-3 **incorrectly, go to 28-2**.
If you answered 27-3 **correctly, go to 28-4**.

If you answered 27-4 **incorrectly, go to 28-3**.
If you answered 27-4 **correctly, go to 28-5**.

If you answered 27-5 **incorrectly, go to 28-4**.
If you answered 27-5 **correctly, go to 28-5**.

28-1 $(4 + \frac{1}{2})(\frac{4}{9} + 2)$ equals what value?

 A. $^{25}/_{9}$

 B. $^{61}/_{18}$

 C. 5

 D. $^{74}/_{9}$

 E. 11

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28-2 $\dfrac{\frac{2}{3} - \frac{1}{2}}{\frac{1}{6} + \frac{1}{4} + \frac{2}{3}} =$

  A. $\frac{2}{13}$

  B. $\frac{2}{9}$

  C. $\frac{13}{20}$

  D. $1\frac{1}{13}$

  E. $3\frac{1}{4}$

28-3 If two numbers have only the number 1 as a common divisor, then they are called "relatively prime." Which of the following are NOT relatively prime?

  I. 3

  II. 4

  III. 7

  IV. 12

  A. I and II, I and III

  B. I and IV, II and IV

  C. II and III, II and IV

  D. II and IV, III and IV

  E. I and II, I and IV

28-4 If it takes a machine ⅔ of a minute to produce one item, how many items will it produce in 2 hours?

  A. ⅓

  B. ⁴⁄₃

  C. 80

  D. 120

  E. 180

28-5 Mr. Smitherly leaves Beverly Hills at 8:00 a.m. and drives north on the highway at an average speed of 50 miles per hour. Mr. Dinkle leaves Beverly Hills at 8:30 a.m. and drives north on the same highway at an average speed of 60 miles per hour. Mr. Dinkle will

  A. overtake Mr. Smitherly at 9:30 a.m.

  B. overtake Mr. Smitherly at 10:30 a.m.

  C. overtake Mr. Smitherly at 11:00 a.m.

  D. be 30 miles behind at 8:35 a.m.

  E. never overtake Mr. Smitherly.

Answers: 28-1 **E**, 28-2 **A**, 28-3 **B**, 28-4 **E**, 28-5 **C**

IF YOU FINISH BEFORE TIME IS CALLED, CHECK YOUR WORK ON THIS SECTION ONLY. DO NOT WORK ON ANY OTHER SECTION IN THE TEST.

STOP

ANALYTICAL SECTION

1-3. Superpersonal awareness (SA) refers to the extraordinary ability of some persons to apparently circumvent normal intellectual and informational techniques and instead acquire knowledge by intuitive means. The three phenomena identified as components of SA are recognition (familiarity with the object), intuition (knowledge of information not directly through the five senses), and abstraction (the ability to realize concrete elements based upon other symbolic elements). All evidence for these components of SA is for the most part dependent upon unusual statistical information that requires a great number of trials for weak returns under nonreproducible conditions.

The author of the passage above assumes which of the following?

A. Superpersonal awareness may consist of more than the three phenomena mentioned.

B. Perception-cognition studies are normally conducted under rigorous controls and specifications.

C. Much evidence has been gathered from unusual events to support the existence of superpersonal awareness.

D. Large numbers of trials have produced evidence which circumvents normal sensory channels.

E. A basis for scientific proof requires significant results from repeatable, controlled experiments.

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2-2. Studies on animals done in the 1930s indicate that stomach juices were the controlling cue for eating. However, this was later contested by researchers noting that animals without stomachs have normal eating habits. Subsequent work done in the 1960s indicated that an "eating center" in the brain controls hunger. More recent work suggests the presence of specific hungers for materials lacking in a given diet; for example, wolves put on low-calcium diets will seek out and eat bones.

In the passage above, the author

  I. favors one theory over two others by citing specific evidence to show its superiority.

 II. cites no important differences among the major findings cited and their implications.

III. presents conflicting information from different studies without favoring any particular theory.

  A. I only

  B. II only

  C. III only

  D. I and II only

  E. II and III only

2-4. The United Greeting Company has discovered that 85% of the artists in a randomly chosen group who worked a ten-hour-per-day, four-day week produced 20% more greeting cards in a month than those employees who worked the traditional five-day, eight-hour-per-day schedule. The same 85% who produced more greeting cards were those in the group who preferred the four-day schedule. The other 15% produced fewer cards per month than those on the five-day schedule.

On the basis of these results, which of the following is likely to produce the greatest increase in the productivity of the workers?

  A. The company will use only a ten-hour, four-day work schedule for 85% of its workers.

  B. The company will use a ten-hour, four-day work schedule for 85% of its workers.

  C. The company will use only eight-hour, five-day work schedules.

  D. The company will allow workers to choose between a four-day and a five-day schedule.

  E. The company will use a four-day and a five-day work schedule in alternate weeks.

Check your answers and continue to the next set of questions.

Questions 3–7

A botanical garden has four greenskeepers: Wilson, Xavier, Yussef, and Zachary. The manager of the garden often has trouble scheduling the greenskeepers to his satisfaction. He must follow these conditions:

One or more of these greenskeepers must trim the greens each day, but none of them does so for two or more days in a row.

The greenskeepers work only Monday through Friday.

3. If Wilson, Xavier, and Yussef trim the greens working together three times from Monday through Friday, which of the following must be true?

   I. Zachary trims the greens on Tuesday.

 II. Zachary trims the greens on Wednesday.

III. Zachary trims the greens on Thursday.

  A. I only

  B. II only

  C. III only

  D. I and III only

  E. I, II, and III

4. Which of the following is possible during the period from Tuesday through Friday?

  A. All four greenskeepers work together on Friday.

  B. Three greenskeepers work together three of the four days.

  C. Xavier works twice as many days as Yussef.

  D. Zachary works three times as many days as Wilson.

  E. Both Wilson and Zachary work three times as many days as Xavier.

5. If Wilson, Xavier, and Yussef work together on Monday, and Wilson, Xavier, and Zachary work together on Thursday, which of the following must be true?

   I. Zachary works alone on Tuesday.

 II. Yussef works alone on Wednesday.

III. Yussef works alone on Friday.

  A. I only

  B. II only

  C. III only

  D. I and II only

  E. I, II, and III

6. Suppose Wilson works alone on Wednesday, and exactly two greenskeepers work Monday, Tuesday, Thursday, and Friday. It must be true that

  A. the same two greenskeepers work Tuesday and Thursday.

  B. Yussef works with Wilson at least one day during the week.

  C. Xavier works exactly two days during the week.

  D. Zachary works with Wilson on Monday or Friday.

  E. the same two greenskeepers work Monday and Friday.

7. If a fifth greenskeeper, Quincy, joins the staff and works only on Tuesday, during that same week of Monday through Friday, what is the maximum number of greenskeepers that can work on Wednesday?

  A. 1

  B. 2

  C. 3

  D. 4

  E. 5

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8-1. American Toothpaste recently conducted a survey to determine how well American was doing in comparison with its nearest competitor, National Toothpaste. The results of the survey found that of the 2135 polled, 70% of the respondents regularly purchase American Toothpaste, 28% of the respondents regularly purchase American's nearest competitor, National Toothpaste, and 18% of the respondents regularly purchase a third brand and distant competitor, Brighten Toothpaste.

If the survey conducted by American Toothpaste is correct, it can be inferred that

A. not all the respondents questioned in the poll regularly purchase toothpaste.

B. some of the brands of toothpaste that were regularly purchased must have been both American and National.

C. some of the respondents of the poll must have answered incorrectly or dishonestly.

D. some of those who regularly purchase American Toothpaste also regularly purchase National Toothpaste.

E. some of the respondents who regularly purchase one brand of toothpaste also regularly purchase another brand of toothpaste.

8-2. For more than a hundred years, entomologists have believed that viceroy butterflies mimic the coloration of the queen and monarch butterflies to avoid being eaten by birds, which avoid the bad-tasting queens and monarchs. But recent experiments have demonstrated that the monarch and the viceroy are equally repellent to birds, while the queen butterfly is somewhat more palatable.

All of the following would be logical conclusions of this passage EXCEPT

A. Scientists are now wondering why the belief that the viceroy imitated the monarch and queen butterflies was never tested before.

B. The conclusions astonished those entomologists who believed that an unprotected species will develop its own defenses rather than simply imitate the appearance of another.

C. The results support the scientists who believe mimicry is rare.

D. Mimicry of the sort the viceroy was supposed to exemplify is probably less common than was believed.

E. The many textbooks that use the viceroy butterfly to illustrate protective mimicry will have to be revised.

8-3. Research was recently undertaken in which subjects were required to indicate which of two sounds was the loudest. In this simple test, associates of the experimenter, posing as other subjects, gave a clearly incorrect answer. This provided the real subject with the dilemma between his or her perception and desire to conform to the group. The results were dramatic: Yielding to an obviously incorrect answer increased as the number of opposing persons increased up to five, after which there was little effect. But when a minimum of one of the associates agreed with the subject, yielding behavior sharply declined, even though the majority was still overwhelmingly against the subject.

Which of the following best expresses the point of the passage above?

A. As more and more people disagree with a research subject, he or she becomes more and more inclined to agree with the group.

B. Uncertain tasks often cause confusion in the minds of subjects faced with uncertain parameters.

C. Associates should not be allowed to confuse a subject's judgment in research studies.

D. Subjects are seldom sure of their judgment when evaluating loudness of sounds.

E. Group pressure may be a strong factor on individual judgment in situations requiring perception.

8-4. A young man with a spotless driving record drove his automobile cautiously whenever he was within the city limits of Dobbsville, but upon leaving Dobbsville, he threw all caution to the wind and drove in a careless manner. When questioned by a passenger in his automobile as to why his driving style changed so radically, the young many declared, "The National Safety Council reports that statistics over the past 20 years show that 97% of all automobile accidents occur within 10 miles of home. Since I live exactly 10 miles within the borders of Dobbsville, I don't have to worry whenever I drive outside of town."

The young man's logic is faulty because

A. he could easily be involved in an accident with a resident of a neighboring town.

B. his actions may be related to percentages recently computed, but not as far back as 20 years.

C. statistics of overall numbers of accidents may tell nothing about any one individual's chances of having an accident.

D. his driving record was spotless because, being so young, he has been driving only a few years.

E. statistics from the National Safety Council are occasionally disputed by reputable researchers.

Analytical Section

8-5. The once vast regions of South American rain forest are fast dwindling in number and size. As a result, species extinction is fifty times more rapid today than two decades ago. Despite the outcries of environmentalists to halt the destruction of species-rich and oxygen-producing forest regions, little is being done to protect these wildernesses, which are so vital to the well-being and continuation of earth's fragile ecological system.

Which of the following is an implication of the passage above?

A. The continued existence and health of rain forests is imperative for the survival of future generations.

B. Environmentalists are unnecessarily concerned about threats to the rain forest.

C. The number of wilderness areas should be increased beyond those that presently exist.

D. Radical action is necessary in order to reverse the environmental damage incurred by wilderness regions.

E. The legal system is slow to effect change but will eventually respond to the ecological needs of the people.

Answers: 8-1 **E**, 8-2 **B**, 8-3 **E**, 8-4 **C**, 8-5 **A**

If you answered 8-1 **incorrectly, go to 9-1**.
If you answered 8-1 **correctly, go to 9-2**.

If you answered 8-2 **incorrectly, go to 9-1**.
If you answered 8-2 **correctly, go to 9-3**.

If you answered 8-3 **incorrectly, go to 9-2**.
If you answered 8-3 **correctly, go to 9-4**.

If you answered 8-4 **incorrectly, go to 9-3**.
If you answered 8-4 **correctly, go to 9-5**.

If you answered 8-5 **incorrectly, go to 9-4**.
If you answered 8-5 **correctly, go to 9-5**.

9-1. Conservative farmers in drought-stricken California have been reluctant to try drip irrigation systems. They complain about its high installation costs. But the systems will produce twice the grapes on half the water, using less fertilizer, herbicide, labor, and electric power. Drip irrigation can be used on row crops as well. But unless the government cuts off the water supply or provides low-interest loans for installation, California farms will continue to overconsume. And why not?

Which of the following is the most logical conclusion to this passage?

A. Water costs are low, and water districts do not reward savings.

B. The drought in California is already five years old and shows no signs of ending.

Team-LRN

C. Banks are ready to lend money for equipment that will aid conservation.

D. Water rationing is expected to affect agricultural customers in the next few years.

E. The acreage of crops that require very little water has remained unchanged for many years.

9-2. Results of recent studies conducted on three breeds of laboratory rats indicate that overfeeding leads to a diminished capacity in locomotive activity as well as a decrease in specific mating behaviors. One can therefore conclude that when human beings overeat, they not only will feel lethargic but also will demonstrate less inclination toward the opposite sex.

Which of the following is an unstated assumption necessary to the passage above?

A. Rats normally have overactive sex lives, and it requires a change in environment to affect their drive.

B. Conclusions about human behavior can be derived from studies observing rat behavior.

C. It is neither immoral nor irresponsible to do experiments that may potentially harm laboratory animals.

D. Human beings typically are lethargic, and when they overeat, they become significantly more so.

E. All other species of rats will demonstrate the same behaviors demonstrated by the laboratory rats.

9-3. When growing redwoods, a forester must thoroughly douse young saplings each morning until the first sign of new growth appears. Douglas firs, on the other hand, are not redwoods. Therefore, a thorough dousing each morning for young Douglas fir saplings is hardly necessary.

The reasoning in the above passage is flawed because

A. a thorough dousing of water each morning will not adversely affect Douglas fir saplings.

B. redwoods and Douglas firs are two different trees and, as such, cannot be compared.

C. many young Douglas fir saplings have been known to thrive given thorough dousing each morning.

D. what is necessary for one tree sapling may be necessary for another sapling, even though they may be different trees.

E. redwoods are typically found in old-growth forests, whereas Douglas firs rarely are.

GO ON TO THE NEXT PAGE

Analytical Section

9-4. A college catalogue states the following: Every student receiving a diploma at graduation after four years of undergraduate study will have demonstrated a competency of at least one particular skill. Some students will have learned skills of research methodology in a particular field of endeavor. Others will have shown excellence in teaching and/or imparting cognitive information. Still others will have demonstrated their ability to write original material, whether fiction or nonfiction.

If the above passage is true, which of the following statements must also be true?

A. All of the skills demonstrated by undergraduates will have been learned at the university.

B. Not all of the skills taught at the university will have been learned by undergraduates.

C. One of the skills demonstrated by undergraduates will be the ability to write original material.

D. Some of the skills learned by under-graduates will not be methodology, excellence in teaching, or ability to write original material.

E. Not all the skills demonstrated by undergraduates will be learned at the end of four years.

9-5. After auditioning for a role in a college play, a student-actor was told the following by the faculty advisor: I'm sorry to have to tell you that the play's producers passed on you for the role for which you auditioned. Because of the ethnic nature of all the roles and their requirement that the performers have a flawless Hungarian accent and be able to speak Russian, it was necessary to deny parts to many capable actors.

Taken at face value, which of the following can be deduced from the faculty advisor's statement?

A. Very few of the student-actors auditioning for the play were actually given parts in the play.

B. Except for the lack of Hungarian accent and inability to speak Russian, the student-actor was otherwise capable for the role.

C. Only those students who were capable actors were given roles in the play.

D. Whether the auditioners were capable actors was only one consideration in assigning roles for the play.

E. None of the actors who were accepted for roles in the play were capable actors.

Answers: 9-1 **A**, 9-2 **B**, 9-3 **D**, 9-4 **C**, 9-5 **D**

Check your answers and go on to the next set of questions.

Questions 10-13

An apartment building has eight floors with one apartment on each floor. Seven families — the Abrams, the Bakers, the Cabots, the DeLeons, the Elgars, the Fertittas, and the Grants — occupy each of the apartments, with one apartment vacant.

The number of floors between the Abrams and the Bakers is exactly the same as the number of floors between the Cabots and DeLeons.

The Elgars are on a floor immediately adjacent to the Fertittas.

The apartment on the bottom, the first floor, is occupied.

The Grants live on a lower floor than the Elgars.

10. Which of the following is a possible arrangement of families, from bottom floor to top floor?

   A. Vacant, Grants, Abrams, Cabots, Bakers, DeLeons, Elgars, Fertittas

   B. Grants, Abrams, Elgars, vacant, Fertittas, Bakers, Cabots, DeLeons

   C. Grants, Bakers, Abrams, Fertittas, Elgars, DeLeons, Cabots, vacant

   D. Abrams, Bakers, Cabots, Grants, vacant, DeLeons, Elgars, Fertittas

   E. Cabots, DeLeons, Elgars, vacant, Grants, Fertittas, Bakers, Abrams

11. If the Fertittas live on the second floor, which of the following must be true?

   A. The top floor is vacant.

   B. The Elgars live on the bottom floor.

   C. The Grants live on the bottom floor.

   D. The Bakers live on the top floor.

   E. The vacant floor is not the top floor.

12. If the Abrams live on the sixth floor, the Bakers live on the seventh floor, and the Fertittas live on the fourth floor, which of the following must be true?

   I. The Cabots live on the first floor.

   II. The Elgars live on the fifth floor.

   III. The DeLeons live on the second floor.

   IV. The top floor is vacant.

   A. I and II only

   B. I, II, and III only

   C. II and III only

   D. II and IV only

   E. I, II, III, and IV

13. If the Abrams and Bakers live on the second and fourth floors, respectively, all of the following can be true EXCEPT

   A. The Cabots live on the sixth floor.

   B. The DeLeons live on the third floor.

   C. The Fertittas live on the seventh floor.

   D. The Grants live on the first floor.

   E. The Elgars live on the seventh floor.

Answers: 10 **C**, 11 **C**, 12 **D**, 13 **A**

If you answered **none of the four questions correctly, go to 14-1**.

If you answered **one of the four questions correctly, go to 14-2**.

If you answered **two of the four questions correctly, go to 14-3**.

If you answered t**hree of the four questions correctly, go to 14-4**.

If you answered **all four of the questions correctly, go to 14-5**.

Analytical Section

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14-1. The swimming pool in little Jimmy Jones's neighborhood park is no longer open. The bond measure in the June ballot will provide money for the Parks and Recreation Department that will be used to repair city parks. Please support this measure so Jimmy and his friends can go swimming this summer.

The author's point is made by

A. using analogy.

B. appealing to authority.

C. pointing out inconsistency.

D. exploiting an ambiguity.

E. arguing from a particular case.

14-2. The breakup of the phone company in 1984 and the deregulation of long-distance rates have produced nothing but benefits. The American phone companies are no longer falling behind the rest of the world in technology. Long-distance rates have declined since deregulation. Telephone costs to businesses have remained the same or even declined slightly. And a legion of smaller telephone companies are showing high profits.

Which of the following, if true, most seriously weakens the argument above?

A. The price of stock in the companies spun off from American Telephone has risen sharply since 1984.

B. The monthly charge for telephone service in the home has risen each year since 1985.

C. Sixty percent of the telephone service in African countries is dependent upon American technology.

D. Increased revenue earned by telephone companies leads to increased federal revenues by way of taxes on telephone calls and corporate profits.

E. Eighty percent of the consumers polled report better telephone services in 1990 than in 1980.

14-3. To complain that the rich are unfairly treated by our tax laws is preposterous. It is the rich who rely most on tax-free income. It is the rich who make use of the loopholes in the tax laws. And it is the richest 5% of the population that controls 95% of the nation's wealth.

Which of the following, if true, best supports the claim above?

A. A fundamental principal of wealth is the use of its power to maintain its wealth.

B. The chances of an income tax audit are higher as taxable income increases.

C. The tax upon capital gains has risen twice in the last decade.

D. At least 80% of the money collected in taxes is used in some form to protect or enhance the nation's wealth.

E. Only the taxable income, not the real income, of the most affluent Americans is known.

Team-LRN

14-4. Apples are classified by increasing size in five grades, from one to five. The price of apples increases with the grade. If an apple has a grade of three or higher, it will cost more than thirty-nine cents per pound.

If the above statements are true, which of the following must also be true?

A. An apple with the grade two will cost less than thirty-nine cents per pound.

B. An apple with the grade of one will cost less than thirty-nine cents per pound.

C. Some apples cost less than thirty-nine cents per pound.

D. An apple with a grade of three may cost thirty-nine cents per pound.

E. An apple with a grade of four will cost more than thirty-nine cents per pound.

14-5. Students in the city's junior high schools have reported that their grades improved when they were permitted to listen to the radio while doing their school homework assignments. It therefore seems probable that school performance could be improved if radios with earphones were permitted during school study halls.

Which of the following statements, if true, would most weaken the argument above?

A. Neither the teachers nor the parents of the students approve of their listening to the radio while doing their homework.

B. Seventy percent of the city's high school students say they listen to the radio while doing their homework.

C. Forty percent of the students who receive above-average grades in junior high school say they never listen to the radio.

D. No libraries in the schools permit the use of radios, though many have audio equipment.

E. Studies of teenage children show a correlation between the ability to solve problems and silence.

Answers: 14-1 **E**, 14-2 **B**, 14-3 **D**, 14-4 **E**, 14-5 **E**

Check your answers and go on to the next set of questions.

Questions 15–18

A chef working at a Mr. Eggs franchise is preparing Mr. Eggs' famous giant breakfast omelets. These omelets require not only the finest grade AA eggs, but also at least two of the following specially prepared ingredients: tomatoes, diced ham, onions, mushrooms, cheese, and shrimp. These ingredients are measured in cups. When the chef cooks an omelet, she must follow Mr. Eggs' strict recipes:

She can never use onions and mushrooms in the same omelet.

For every cup of diced ham, she must also use a cup of mushrooms, but if mushrooms are used, she does not have to use diced ham.

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If cheese is included in the omelet, the number of cups she uses must be greater than the total number of cups she uses for all the other specially prepared ingredients combined in that omelet.

For every cup of tomatoes used, she must use two cups of onions.

No omelet uses all of the specially prepared ingredients.

She cannot use any ingredients other than the ones listed above.

15. Which of the following combinations of ingredients can never be used together?

    A. Tomatoes and diced ham

    B. Tomatoes and onions

    C. Tomatoes and cheese

    D. Tomatoes and shrimp

    E. Cheese and shrimp

16. If one more cup of onions is added to the following ingredients, which of the following would conform to a Mr. Eggs recipe?

    A. Eggs, 2 cups onions, 1 cup mushrooms, 3 cups cheese, 2 cups shrimp

    B. Eggs, 2 cups diced ham, 1 cup onions, 4 cups cheese, 3 cups shrimp

    C. Eggs, 1 cup diced ham, 1 cup onions, 1 cup cheese, 2 cups shrimp

    D. Eggs, 1 cup tomatoes, 2 cups onions, 2 cups cheese, 1 cup shrimp

    E. Eggs, 1 cup tomatoes, 1 cup onions, 5 cups cheese, 1 cup shrimp

17. Which complete recipe below conforms to the restrictions of a Mr. Eggs omelet?

    A. Eggs, 3 cups onions, 3 cups tomatoes

    B. Eggs, 2 cups diced ham, 2 cups tomatoes

    C. Eggs, 1 cup tomatoes, 1 cup cheese

    D. Eggs, 4 cups mushrooms, 4 cups diced ham

    E. Eggs, 5 cups cheese, 5 cups diced ham

18. Of the following, which one ingredient could be added to ingredients already containing two cups onions and one cup cheese to make it conform to a Mr. Eggs omelet?

    A. 2 cups cheese

    B. 2 cups onions

    C. 1 cup mushrooms

    D. 1 cup diced ham

    E. 1 cup tomatoes

Answers: 15 **A**, 16 **E**, 17 **D**, 18 **A**

If you answered **none of the four questions correctly, go to 19-1**.

If you answered **one of the four questions correctly, go to 19-2**.

If you answered **two of the four questions correctly, go to 19-3**.

If you answered **three of the four questions correctly, go to 19-4**.

If you answered **all four of the questions correctly, go to 19-5**.

19-1. Biff Bramley is a great baseball player. After all, he led the league in home runs last season.

The foregoing conclusion can be properly drawn if it is true that

A. Biff Bramley did lead the league in home runs last season.

B. Biff Bramley also led the league in batting average.

C. great baseball players are home run hitters.

D. it takes a great baseball player to lead the league in home runs.

E. success is something that cannot be attained in one season.

19-2. Following the publication of a report that the power steering on some 1992 Wombats locked at low speeds causing potential accidents, the chairman of Wombat Motors remarked, "This could really hurt our company."

The chairman assumes that

I. many employees of Wombat Motors drive the company's products.

II. the power-steering defect cannot be fixed.

III. potential accidents could affect Wombat Motor's reputation.

A. I only

B. II only

C. III only

D. I and II only

E. I and III only

19-3. The crime rate in this city has reached new heights. As your police commissioner, I know that the only answer to this problem is to increase the quality of our police force. Therefore, I'm petitioning the city council to enact pay raises for municipal employees without delay.

Which of the following is a presupposition essential to the above passage?

A. Crime is inversely proportional to the pay of civil servants.

B. A better-paid police officer is a police officer better able to reduce crime.

C. Crime can be controlled through bribery.

D. The city council is composed of scoundrels.

E. Police are paid far too little according to their worth.

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Analytical Section

19-4. In the past year, the number of deaths of innocent bystanders killed by gangs has increased 25 percent. The number will not decline until the city council is willing to spend the money to increase the size of foot patrols in the neighborhoods plagued by this violence.

Of the following, the best criticism of the argument above is that the argument does NOT

A. take into account the possibility of dealing with the gang problems by any means except foot patrols.

B. consider the possibility that the bystanders were, in fact, not innocent.

C. differentiate between the innocent bystanders and other victims of gang violence.

D. take into account the fact that, regardless of anticrime efforts, a certain number of accidental deaths occur every year.

E. consider the other fiscal needs of the city that may be more important.

19-5. Between 1980 and 1990, the number of divorces in the New England states increased by 20%. Therefore, the number of children in New England living in single-parent homes is probably 20% higher in 1991 than it was in 1981.

All of the following, if true, would weaken the conclusion in the passage above EXCEPT

A. The number of marriages in the New England states between 1980 and 1990 decreased by 25%.

B. Between 1980 and 1990, the percentage of the New England population under 25 years old who moved to southern states increased by 20%.

C. Ninety percent of the American men who are divorced remarry in three years or less.

D. Fifty percent of the New Englanders who moved to Sunbelt states between 1980 and 1990 were single parents with one or more children.

E. Between 1980 and 1990, the number of adults living in New England remained unchanged.

Answers: 19-1 **D**, 19-2 **C**, 19-3 **B**, 19-4 **A**, 19-5 **E**

If you answered 19-1 **incorrectly, go to 20-1**.
If you answered 19-1 **correctly, go to 20-2**.

If you answered 19-2 **incorrectly, go to 20-1**.
If you answered 19-2 **correctly, go to 20-3**.

If you answered 19-3 **incorrectly, go to 20-2**.
If you answered 19-3 **correctly, go to 20-4**.

If you answered 19-4 **incorrectly, go to 20-3**.
If you answered 19-4 **correctly, go to 20-5**.

If you answered 19-5 **incorrectly, go to 20-4**.
If you answered 19-5 **correctly, go to 20-5**.

20-1. The Great Salt Lake in Utah and the Dead Sea in Israel are both known for the high salt content of the water. Both bodies are considerably more saline than the ocean, with the Dead Sea having the highest salt content of all. Tourists who venture to swim in either of the saltwater lakes are usually amazed and amused by how easily they can float. Tour guides rightly explain that the higher the salinity level, the more buoyant objects are in the water.

Which of the following is best supported by the information above?

A. Swimmers will be less buoyant in ocean water than they are in the Great Salt Lake.

B. The Dead Sea is becoming increasingly saline with each passing year.

C. Tourists will be equally buoyant in fresh water and ocean water.

D. The salinity of the Great Salt Lake supports a few life forms, while the Dead Sea is devoid of any life.

E. Buoyancy forces in the Dead Sea and the Great Salt Lake also depend on other minerals present in the water.

20-2. A truism in publishing circles states that good writers are rarely good editors, and good editors are rarely good writers.

If true, which of the following is likely an inference from the statement above?

A. Editing well is just as difficult as writing well.

B. A person who can both write well and edit well is rare.

C. Writers and editors have little respect for each others' skills.

D. Benjamin Franklin was both a good writer and a good editor.

E. The publishing industry has more need for editors than writers.

20-3. The city council is considering the so-called "hotel-room prison" law, which permits some people convicted of nonviolent crimes to serve their sentences on weekends in small suburban jails that often have many cells unused. The prisoners must pay up to $125 per day for the cells and their food. These fees go to support law enforcement throughout the city.

All of the following arguments are likely to be used in support of this law EXCEPT

A. All people who are convicted of nonviolent crimes should be given a choice of when and where they serve their sentences.

B. Many jails and prisons are overcrowded already.

C. Parents serving sentences on weekends are able to work to support their families during the week.

D. Prisoners should share some of the cost of their imprisonment.

E. The profits from this program will help to reduce crime throughout the city.

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Analytical Section

20-4. If we reduce the tax on capital gains on the sale of stocks, investors who have capital gains will sell their stocks and the result will be a much higher amount of taxable capital gains. Stock brokers will earn more, so income tax revenues will increase. Both the government and the taxpayer will be better off.

This argument is based on which of the following assumptions?

A. The increased income from capital gains taxes will be equal to or greater than deductions for capital losses.

B. There will be a rise in the prices of stocks producing capital gains.

C. Only a small percentage of the nation's taxpayers will be affected by a reduction in taxes on capital gains.

D. The capital gains tax is unfair to taxpayers on the higher end of the tax scale.

E. Investors are reluctant to sell stocks because of the tax on capital gains.

20-5. The letter below was sent to a candidate applying for entrance to Nathford University:

Thank you for your interest in Nathford University. We regret to say that your application for entrance has been rejected. Unfortunately, because of the unusually high number of candidates this year, we were not even able to accept all those with SAT scores of 1000 or above, as has been our practice in the past. We only have a limited number of openings, and must accept entering students accordingly.

Which of the following can be validly concluded from the letter?

A. The student receiving the letter had SAT scores of 1000 or above.

B. The student receiving the letter did not have SAT scores of 1000 or above.

C. Nathford University accepted only those students with SAT scores of 1000 or above.

D. Nathford University rejected many students with SAT scores of 1000 or above.

E. Nathford University had constraints other than SAT scores that affected selection of candidates.

Answers: 20-1 **A**, 20-2 **B**, 20-3 **A**, 20-4 **E**, 20-5 **E**

Check your answer and go on to the next set of questions.

Questions 21–24

Mrs. Gold goes to the local pet store and purchases eight newly born puppies. Before she decides which ones to give her grandchildren, she wants to sort the puppies to make sure each grandchild gets what they wanted. As she starts to sort the puppies she notices the following:

Five of the puppies are female.
Seven of the puppies are brown.
Four of the puppies are spotted in color; the others are solid.

21. Which of the following must be true?

   I. All of the females are brown.

  II. At least one of the spotted puppies is female.

 III. Three of the brown puppies are male.

  A. I only

  B. II only

  C. III only

  D. I and II only

  E. II and III only

22. Which of the following must be FALSE?

  A. All the spotted females are brown.

  B. One of the females is not brown.

  C. One of the males is not brown.

  D. All the males are spotted and brown.

  E. All the females are spotted and brown.

23. Which of the following must be true?

  A. At least one spotted puppy is not brown.

  B. At least three spotted puppies are not male.

  C. At least three brown puppies are not female.

  D. At least three brown puppies are not spotted.

  E. At least one male puppy is not spotted.

24. Which of the following must be FALSE?

  A. All the male puppies are brown and spotted.

  B. Four brown puppies are all female.

  C. All the nonspotted puppies are male.

  D. All the spotted puppies are female.

  E. All the nonspotted puppies are female.

Answers: 21 **B**, 22 **E**, 23 **D**, 24 **C**

If you answered **none of the four questions correctly, go to 25-1**.

If you answered **one of the four questions correctly, go to 25-2**.

If you answered **two of the four questions correctly, go to 25-3**.

If you answered **three of the four questions correctly, go to 25-4**.

If you answered **all four of the questions correctly, go to 25-5**.

Analytical Section

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25-1. The true test of liberty is a willingness to grant it to those who would deny it to us.

Which of the following best illustrates the idea in this quotation?

A. The Supreme Court denies an employer's right to prevent only female employees from engaging in work that exposes them to higher levels of lead.

B. The American Civil Liberties Union supports the rights of the Ku Klux Klan to hold a rally in Skokie, Illinois.

C. The Teamsters' Union supports a Republican candidate for governor who opposes higher taxes on Japanese imports.

D. The mayor opposes the call for the resignation of the chief of police in the wake of a drug-abuse scandal in the police department.

E. The Canadian government refuses to extradite to the United States an accused man whose conviction might result in capital punishment.

25-2. After six months of intensive television watching, at the end of the Iraqi war 75 percent of the Americans who supported the war mistakenly believed that the United States had made clear its intention to support Kuwait militarily before the Iraqi invasion. Seventy-seven percent did not know that Israel still occupied any lands of its Arab neighbors. This same large percentage of the American people has been watching at least two hours of television news every day for six months and claims to believe that

the United States army should be used to restore the sovereignty of any illegally occupied country.

Which of the following is the most appropriate conclusion of this paragraph?

A. It seems clear that the Americans approve only of wars they believe they will win.

B. For those who believe that television news watchers will be well informed, these results must be grimly disillusioning.

C. The Iraqi war was a just war undertaken by a principled government against an illegal occupation.

D. This proves that we can know only what we wish to know.

E. The army's ratings have never been higher.

25-3. Interviews with police and hospital emergency room workers have shown that 65% of them believe there is a significantly higher number of accidents on nights when the moon is full than on other nights. But statistical studies show that the number of accidents on nights when the moon is full is, in fact, lower than on the other nights when weather conditions are similar.

Which of the following is the most logical completion of the paragraph above?

A. The chances of the weather's being bad on nights of the full moon must be greater than on other nights.

B. The statistical studies are probably in error.

C. Legends about the sinister effects of the full moon go back thousands of years and must have an ultimate basis in fact.

D. People will often believe an event has happened if they expect that event to happen.

E. On nights of the full moon when the sky is overcast, the number of accidents is higher.

25-4. When two dozen Fortune-500 chairpersons were interviewed, all agreed that business acumen and training were rarely important criteria for corporations to consider in their selection of executives to head important corporate divisions. Selection of divisional executives was based more on interpersonal and social qualities than on learned and intellectual skills. In fact, some of the most productive divisional executives had little or no business training. Unhappily for corporations, however, executives with strong interpersonal talents are seldom, if ever, available for hire.

In the above passage, the response of the chairpersons implies which of the following?

A. If a corporation believes that an executive has learned intellectual skills, it ought to consider that executive for a position as one of its divisional executives.

B. If a corporation determines that an executive has no business training, it ought not to consider that executive for an important divisional position.

C. If a corporation wants a particular executive for a divisional position, the corporation assumes that the executive will have the training and business skills to perform the necessary skills.

D. If a corporation signs an executive to a divisional position, that corporation probably believes the executive to have interpersonal and social skills.

E. If a corporation does not sign an executive to a divisional position, that executive does not have any interpersonal or social skills.

Analytical Section

25-5. Mr. Tibbitts won't teach classes during the summer, and since he won't, neither will Ms. Mondragon. If Ms. Mondragon and Mr. Parnelli both decide not to teach classes during the summer, then Professor Revlon will have to teach summer classes, which will take him away from his administrative duties and will no doubt cause confusion in the administrative office. Therefore, Professor Revlon's actions will likely cause confusion in the administrative office.

Which of the following, if true, would allow the author to properly draw the conclusion expressed in the argument above?

   I. Professor Revlon will not teach summer classes.

   II. Ms. Mondragon will not teach summer classes.

  III. Mr. Parnelli will not teach summer classes.

   A. I only

   B. II only

   C. III only

   D. I and II only

   E. I and III only

Answers: 25-1 **B**, 25-2 **B**, 25-3 **D**, 25-4 **D**, 25-5 **C**

Check your answer and go on to the next set of questions.

Questions 26–29

Eight antique airplanes are being considered for storage in two warehouses (East and West). The airplanes are single-wing (Dino, Kressna, Bonner, and Lear) and double-wing (Rickenbacher, Airheart, Orville, and Wilbur).

Neither of the two warehouses may go unoccupied.

The Dino and the Kressna may not be stored in the same warehouse.

The Lear and the Airheart are owned by the same pilot and must be stored together in the same warehouse.

The Dino and the Rickenbacher are serviced by the same mechanic and must be stored together in the same warehouse.

At least seven of the airplanes must be stored in the warehouses.

26. Which of the following could comprise the total storage of the East warehouse?

   A. Kressna, Lear, Rickenbacher, Airheart, Orville, Bonner

   B. Rickenbacher, Orville, Wilbur, Dino, Bonner

   C. Rickenbacher, Airheart, Orville, Dino

   D. Kressna, Lear, Orville, Dino, Bonner

   E. Lear, Rickenbacher, Dino, Bonner

27. All of the following are suitable storage arrangements for the West warehouse EXCEPT

   A. Kressna, Orville, Bonner

   B. Kressna, Lear, Airheart, Orville, Wilbur, Bonner

C. Kressna, Lear, Airheart, Wilbur, Bonner

D. Kressna, Lear, Airheart, Orville

E. Kressna, Lear, Rickenbacher, Airheart, Bonner

28. If the Kressna is the only single-wing airplane stored in the East warehouse, which of the following must be true?

A. The East warehouse contains exactly two airplanes.

B. All the double-wing airplanes are stored.

C. Both warehouses each contain two double-wing airplanes.

D. Five or fewer airplanes are stored in the West warehouse.

E. At least three single-wing airplanes are stored.

29. Only the Dino and one other airplane are stored in the East warehouse. If the Kressna is stored, then the West warehouse must contain

A. the Kressna, Wilbur, Orville, and at least two more.

B. the Kressna, Lear, Airheart, and at least two more.

C. the Kressna, Airheart, Lear, Orville, but not the Wilbur.

D. the Kressna, Wilbur, Lear, Airheart, but not the Orville.

E. the Kressna, Wilbur, Lear, Airheart, and Orville.

Answers: 26 **B,** 27 **E,** 28 **E,** 29 **B**

If you answered **none of the four questions correctly, go to 30-1**.

If you answered **one of the four questions correctly, go to 30-2**.

If you answered **two of the four questions correctly, go to 30-3**.

If you answered **three of the four questions correctly, go to 30-4**.

If you answered all **four of the questions correctly, go to 30-5**.

30-1. "These days, people are driving faster and faster on the road regardless of the 55 mph speed limit," Jimmy commented. "I know this because my dad is a police officer, and he writes twice as many speeding tickets now than he did ten years ago."

Which of the following is an assumption that supports the conclusion drawn above?

A. The number of speeding tickets an officer writes is an indication of the over-the-limit speed at which people drive.

B. Because modern technologies have improved the power of automobile engines, the maximum speed of automobiles has also increased.

C. The speed limit now is higher than it was ten years ago.

D. Most drivers on the road today possess the urge to drive fast.

E. People drive faster today because it is difficult to keep track of one's speed when concentrating on driving carefully.

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Analytical Section

30-2. The observation of groups of chimpanzees living together in the wild has shown that when the number of adult males in a group is more than six, but less than ten, dangerous and sometimes fatal fights are common. But when the number is more than ten, or less than six, fighting is very rare. Therefore, zoos must be required to limit the size of chimpanzee groups to six or fewer male adults.

The conclusion of the passage above makes which of the following assumptions?

A. That chimpanzees will behave the same in a zoo as in the wild.

B. That with fewer than six males in a group, chimpanzees will fight infrequently.

C. That a group with fewer than six male chimpanzees will be safer.

D. Fighting among chimpanzees is not determined by the number of adult males.

E. With more than ten males in a group, chimpanzees will be overcrowded.

30-3. Prior to 1963, the ovens in most English homes were fueled by a highly poisonous gas derived from coal. In the last eighteen years, all but a few of these homes have been converted to a far less lethal natural gas. During the same period, suicides in Great Britain involving gas dropped from over 2300 to 11 per year, and the suicide rate fell by one third.

Which of the following may be inferred from this information?

A. Suicide is probably anger directed at another but exercised upon oneself.

B. If given the chance to delay, many potential suicide victims would change their minds.

C. Suicide in Great Britain is no longer the expression of an ancient cultural tradition.

D. Religious sanctions have always been the most important factor in preventing suicide.

E. Suicide is increasingly predictable and preventable.

30-4. The profits in the United States from the sale of radios by the three largest Japanese manufacturers of electronics equipment last year represented 80% of the total profits earned by all American and foreign manufacturers. Yet 35% of the radios purchased in the United States last year were made by American manufacturers.

If the information above is true, which of the following can properly be concluded about the radios sold in the United States?

A. Foreign manufacturers other than the Japanese had a large market share.

B. Labor costs are higher in Japan than in other Asian countries that manufacture electronic products.

C. Japanese manufacturers have a higher margin of profit than those of other countries.

D. The Japanese increased their sales by selling at sharply discounted prices.

E. Fifteen percent of the total profits from the sale of radios was earned by foreign manufacturers other than the three largest Japanese companies.

30-5. If the effect is what causes the cause to become a cause, then the effect, not the cause, should be treated as origin.

If this statement is accepted, which of the following statements will be true?

A. The cause and the effect are identical.

B. There is no such thing as cause and effect.

C. The pinprick causes the pain.

D. Heavy rains are the cause of floods.

E. The lightning will follow the thunder.

Answers: 30-1 **A**, 30-2 **A**, 30-3 **B**, 30-4 **C**, 30-5 **C**

Check your answer and go on to the next set of questions.

Questions 31–35

Six commuter trains depart, one every hour on the hour. Of the six, three are express trains (the Streamliner, the Coast, and the Flyer) and three are local trains (the Arrow, the Beamer, and the Zephyr). Four commuters (Jackson, Klein, Landau, and Morris) each ride a different train. The following is always true:

The first train departs at 5 a.m. and the last train departs at 10 p.m.

Each train departs at a different hour, and the express trains depart only at odd-numbered hours.

The Zephyr departs earlier than the Coast.

If the Coast departs at 7 a.m., then the Streamliner departs at 5 a.m.

Klein's train departs at 7 a.m.; Morris rides the Beamer, which departs at 10 a.m.

Jackson's train departs before Klein's, and Landau's train departs after Klein's.

31. Which of the following time intervals is possible between the departure of Jackson's train and the departure of Landau's train?

I. Exactly two hours

II. Exactly three hours

III. Exactly four hours

A. I only

B. I and II only

C. I and III only

D. II and III only

E. I, II, and III

32. Of the following, which could be the daily schedule of departures, from earliest to latest?

    A. Coast, Arrow, Streamliner, Zephyr, Flyer, Beamer

    B. Streamliner, Zephyr, Coast, Arrow, Flyer, Beamer

    C. Flyer, Zephyr, Coast, Arrow, Streamliner, Beamer

    D. Streamliner, Zephyr, Arrow, Coast, Flyer, Beamer

    E. Beamer, Arrow, Coast, Zephyr, Streamliner, Flyer

33. Given the information that Klein rides the Streamliner, which must be true?

    A. Jackson rides the Flyer.

    B. Landau rides the Coast.

    C. The Arrow departs at 8 a.m.

    D. The Zephyr departs at 6 a.m.

    E. The Coast departs at 9 a.m.

34. Which of the following is a complete and accurate listing of the trains that CANNOT be scheduled for 6 a.m.?

    A. Arrow, Zephyr, Beamer

    B. Arrow, Streamliner, Beamer

    C. Flyer, Zephyr, Beamer

    D. Flyer, Streamliner, Coast, Beamer

    E. Flyer, Streamliner, Coast, Zephyr, Beamer

35. Suppose the schedule is altered and trains depart two hours apart, with Morris departing on the final train, the Beamer, at 3 p.m. If all other restrictions remain the same, all of the following would be possible EXCEPT

    A. Klein rides the Coast.

    B. Landau's train departs at 9 a.m.

    C. Landau's train departs at 11 a.m.

    D. Landau's train departs at 1 p.m.

    E. Jackson rides the Zephyr.

Answers: 31 **E**, 32 **B**, 33 **E**, 34 **D**, 35 **A**

IF YOU FINISH BEFORE TIME IS CALLED, CHECK YOUR WORK ON THIS SECTION ONLY. DO NOT WORK ON ANY OTHER SECTION IN THE TEST.

STOP

CHARTING AND ANALYZING YOUR TEST RESULTS

Use the charts on the following pages to carefully analyze your results and spot your strengths and weaknesses. You should also complete the entire process of analyzing problems in each subject area for the practice test. You can then reexamine these for trends in types of errors (repeated errors) or poor results in specific subject areas. **This reexamination and analysis is of tremendous importance in helping you maximize your score.**
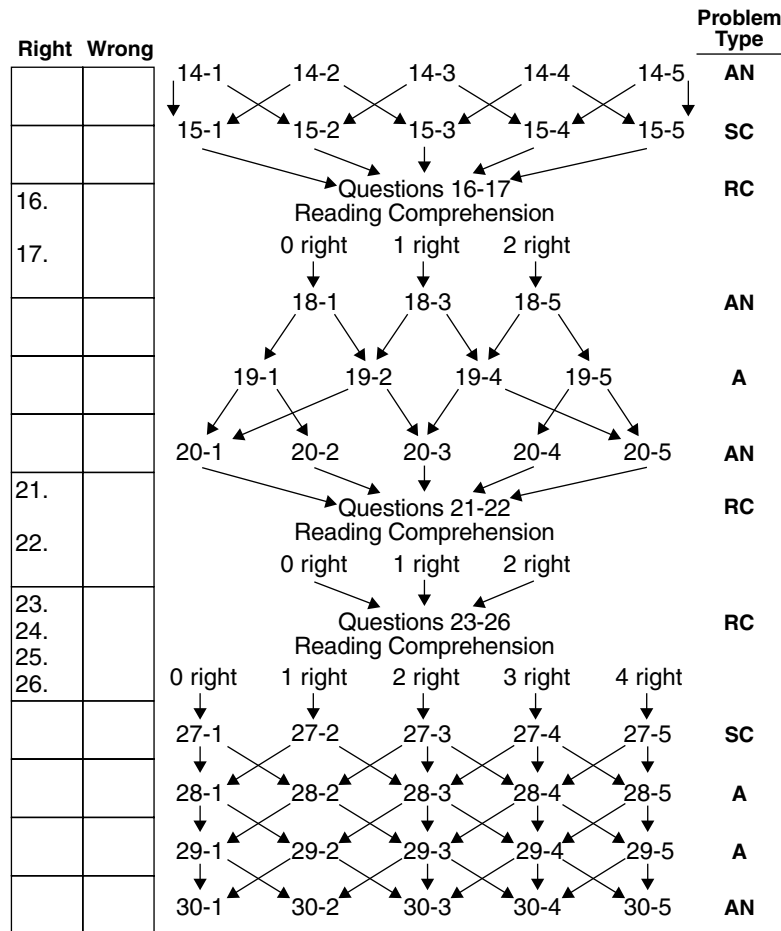
Be sure to also carefully read the answers and explanations that follow these charts.

Verbal Section

The first step in analyzing your results is charting your answers.

On the following chart, draw a small square around the questions you answered correctly and a small circle around the ones you missed. As you follow the path of your questions, be sure to mark the right/wrong box to the left of each question. (You may wish to use a highlighter to graphically follow your path.)

Problem Types:
A – Antonyms
An – Analogies
SC – Sentence Completion
RC – Reading Comprehension

Right	Wrong		Problem Type
		1-3	AN
		2-2 2-4	SC
		3-1 3-3 3-5	SC
		4-1 4-2 4-4 4-5	A
		5-1 5-2 5-3 5-4 5-5	SC
		6-1 6-2 6-3 6-4 6-5	SC
		7-1 7-2 7-3 7-4 7-5	A
		8-1 8-2 8-3 8-4 8-5	A
		9-1 9-2 9-3 9-4 9-5	A
		10-1 10-2 10-3 10-4 10-5	A
		11-1 11-2 11-3 11-4 11-5	AN
		12-1 12-2 12-3 12-4 12-5	A
		13-1 13-2 13-3 13-4 13-5	AN

Right	Wrong						Problem Type
		14-1	14-2	14-3	14-4	14-5	AN
		15-1	15-2	15-3	15-4	15-5	SC
				Questions 16-17			RC
16.				Reading Comprehension			
17.				0 right 1 right 2 right			
			18-1	18-3	18-5		AN
		19-1	19-2	19-4	19-5		A
		20-1	20-2	20-3	20-4	20-5	AN
21.				Questions 21-22			RC
22.				Reading Comprehension			
				0 right 1 right 2 right			
23.				Questions 23-26			RC
24.				Reading Comprehension			
25.							
26.		0 right	1 right	2 right	3 right	4 right	
		27-1	27-2	27-3	27-4	27-5	SC
		28-1	28-2	28-3	28-4	28-5	A
		29-1	29-2	29-3	29-4	29-5	A
		30-1	30-2	30-3	30-4	30-5	AN

Now that you've completed charting your path, tally your responses and review and analyze the results with the following charts.

Average Level Correct

Although the GRE CBT uses very precise measures to calculate your score, the following calculations will give you a very general approximation of the average level of question that you got right.

Note: Count all Reading Comprehension questions as level 3 questions.

Trying to finish all 30 questions is important, and the following score chart assumes that you've done so.

Score Chart				
	Number Correct	×	*Level of Difficulty*	
Level 1	_____	×	1 = _____	
Level 2	_____	×	2 = _____	
Level 3	_____	×	3 = _____	
Level 4	_____	×	4 = _____	
Level 5	_____	×	5 = _____	
RC	_____	×	3 = _____	
Total	_____	÷	**30** = _____	(Average level)

Type of Question Missed

Identifying the type of question you most often miss will help you use your study time efficiently.

Type of Question Missed			
	Possible	*Right*	*Wrong*
Antonyms	9		
Analogies	7		
Sentence Completion (SC)	6		
Reading Comprehension (RC)	8		
Totals	30		

Quantitative Section

On the following chart, draw a small square around the problems that you answered correctly and a small circle around the ones you missed. As you follow the path of your problems, be sure to mark the right/wrong box to the left of each question. (You may want to use a highlighter to graphically follow your path.)

Subject Area:
A-Arithmetic
AL-Algebra
G-Geometry
Graphs

Problem Type:
QC-Quantitative Comparison
MA-Math Ability
Graphs

Right	Wrong		Problem Type

1-3
AR — **QC**

2-2   2-4
AR   AR — **QC**

3-1   3-3   3-5
AL   AL   AL — **QC**

4-1   4-2   4-4   4-5
AR   AR   AR   AR — **MA**

5-1   5-2   5-3   5-4   5-5
G   G   G   G   G — **QC**

6-1   6-2   6-3   6-4   6-5
G   G   G   G   G — **MA**

7-1   7-2   7-3   7-4   7-5
AL   AL   AL   AL   AL — **QC**

8-1   8-2   8-3   8-4   8-5
AL   AL   AL   AL   AL — **MA**

9-1   9-2   9-3   9-4   9-5
AR   AR   AR   AR   AR — **QC**

10-1   10-2   10-3   10-4   10-5
AL   AL   AL   AL   AL — **QC**

11-1   11-2   11-3   11-4   11-5
G   G   G   G   G — **QC**

12-1   12-2   12-3   12-4   12-5
AL   AL   AL   AL   AL — **MA**

13-1   13-2   13-3   13-4   13-5
AR   AR   AL   AL   AL — **QC**

14.
15.

Questions 14-15
Graph

0 right   1 right   2 right — **Graph**

16-1   16-3   16-5
AL   AL   AL — **QC**

17-1   17-2   17-4   17-5
AR   AR   AR   AR — **QC**

18-1   18-2   18-3   18-4   18-5
G   G   G   G   G — **MA**

19-1   19-2   19-3   19-4   19-5
AL   AL   AL   AL   AL — **QC**

20.
21.

Questions 20-21
Graph

0 right   1 right   2 right — **Graph**

22-1   22-3   22-5 — **MA**

G   G   G

23-1   23-2   23-4   23-5 — **QC**
G   G   G   G

24-1   24-2   24-3   24-4   24-5 — **QC**
AL   AL   AL   AL   AL

25-1   25-2   25-3   25-4   25-5 — **QC**
AR   AR   AR   AR   AL

26-1   26-2   26-3   26-4   26-5 — **MA**
AL   G   G   G   G

27-1   27-2   27-3   27-4   27-5 — **MA**
AR   AR   AR   AR   AR

28-1   28-2   28-3   28-4   28-5 — **MA**
AR   AR   AR   AR   AL

Team-LRN

Now that you've completed charting your path, you can tally your responses and review and analyze the results with the following charts.

Average Level Correct

Although the GRE CBT uses very precise measures to calculate your score, the following calculations will give you a very general approximation of the average level of questions that you got right. It is important that you try to finish all 28 questions, and the following score chart assumes that you have done so.

Average Level of Correct Answers			
	Number Correct	×	*Level of Difficulty*
Level 1	_____	×	1 = _____
Level 2	_____	×	2 = _____
Level 3	_____	×	3 = _____
Level 4	_____	×	4 = _____
Level 5	_____	×	5 = _____
RC	_____	×	3 = _____
Total	_____	÷	**28** = _____ (Average level)

Type of Problem Missed

Identifying the type of problem you most often miss will help you use your study time more efficiently.

Missed Problem Types			
	Quantitative Comparison Right/Wrong	*Problem Solving Right/Wrong*	*Graphs Right/Wrong*
Arithmetic	/	/	/
Algebra	/	/	/
Geometry	/	/	/
Totals	/	/	/

Analytical Section

On the following chart, draw a small square around the questions you answered correctly and a small circle around the ones you missed. As you follow the path of your questions, be sure to mark the right/wrong box to the left of each question. (You may want to use a highlighter to graphically follow your path.)

Problem Types:
LR-Logical Reading
AR-Analytical Reasoning

Problem Type

Right Wrong

1-3 — **LR**

2-2   2-4 — **LR**

3.
4.
5.
6.
7.

Questions 3-7 — **AR**

0 right 1 right 2 right 3 right 4 right 5 right

8-1   8-2   8-3   8-4   8-5 — **LR**

9-1   9-2   9-3   9-4   9-5 — **LR**

10.
11.
12.
13.

Questions 10-13 — **AR**

0 right 1 right 2 right 3 right 4 right

14-1   14-2   14-3   14-4   14-5 — **LR**

15.
16.
17.
18.

Questions 15-18 — **AR**

0 right 1 right 2 right 3 right 4 right

19-1   19-2   19-3   19-4   19-5 — **LR**

20-1   20-2   20-3   20-4   20-5 — **LR**

21.
22.
23.
24.

Questions 21-24 — **AR**

0 right 1 right 2 right 3 right 4 right

25-1   25-2   25-3   25-4   25-5 — **LR**

26.
27.
28.
29.

Questions 26-29 — **AR**

0 right 1 right 2 right 3 right 4 right

30-1   30-2   30-3   30-4   30-5 — **LR**

31.
32.
33.
34.

Questions 31-35 — **AR**

0 right 1 right 2 right 3 right 4 right

Now that you've completed charting your path, you can tally your responses and review and analyze the results with the following charts.

Average Level Correct

Although the GRE CBT uses very precise measures to calculate your score, the following calculations will give you a very general approximation of the average level you got right.

Note: Count all Analytical Reasoning questions as level 3 questions.

It's important that you try to finish all 35 questions, and the following score chart assumes that you have done so.

Average Level of Correct Answers			
	Number Correct	×	*Level of Difficulty*
Level 1	_____	×	1 = _____
Level 2	_____	×	2 = _____
Level 3	_____	×	3 = _____
Level 4	_____	×	4 = _____
Level 5	_____	×	5 = _____
RC	_____	×	3 = _____
Total	_____	÷	**35** = _____ (Average level)

Type of Question Missed

Identifying the type of question you most often miss will help you use your study time efficiently.

Missed Problem Types			
	Possible	*Right*	*Wrong*
Logical Reasoning (LR)	9		
Analytical Reasoning (AR)	26		
Totals	35		

Where to Go from Here

Now that you've completed the chart and analyzed your results, return to the simulated computer-adaptive test and work all the problems in an organized manner. First work all of the problems at the 1 level, that is, 4-1, 5-1, 6-1, 7-1, and so on. Review the answer to each problem after you work it. Having attempted and reviewed the simpler problems, next work and review all the level 2 problems, that is, 4-2, 5-2, 6-2, 7-2, and so on.

Continue this process until you've worked all the problems available on this simulated exam. Starting with the easier problems will help you build a basis for your review. Likewise, following this process will help you prepare to attack the more difficult problems.

ANSWERS AND EXPLANATIONS FOR THE PRACTICE TEST

Verbal Section

1-3. **B.** *Photosynthesis* is a process, the product of which is *oxygen.* Similarly, *heat* is the product of the process of *combustion.* A *camera* is not a process.

2-2. **C.** The correct answer is *incorporated.* The conjunction *and* indicates that the ideas from Greek philosophy are considered parallel to Greek language in the first half of the sentence. With crucial derivative ideas one would not *nullify, criticize,* or *alter* them.

2-4. **C.** The answer here is *restive . . . unperturbed. Although* signals a contrast between the boys' behavior and the girls'. The correct pair of words then must be opposite in meaning. Choices **A** and **B** are synonymous pairs and can be eliminated on that basis. Choices **D** and **E** are not contrasts—*remorseful* (sad) and *enchanted* (charmed) and *tactiturn* (silent) and *attracted* (drawn to) are not opposite in meaning. **C** is left as the only pair that satisfies the context and the contrast indicated by the rest of the sentence.

3-1. **E.** The signal word here is *reached*; the only choice that one can *reach* is *pinnacle.* If you had asked yourself, "What was reached?" this answer should have occurred to you.

3-3. **C.** The answer is *criticized . . . curb.* The idiomatic expression in the second part of the sentence calls for a verb. *Excesses* are *curbed,* not *implemented, promoted,* or *ostracized.* Choice **B** is an incorrect use of the word *chagrined,* leaving **C** as the best choice.

3-5. **B.** The best choice is *potential.* The clue words in this sentence are *ratio* and *resistance.* The word *resistance* has a negative connotation. *Ratio* suggests that the answer will need to contrast with *resistance.* The only positive words provided as choices are **B**, *potential,* and **C**, *excitement. Excitement* does not provide the sentence with proper contextual meaning.

4-1. **D.** *Resuscitate* (*re* = again; *cit* = to put into motion) means to revive, bring back to life. Its opposite is *kill.* To *succumb* may mean to die, but could be an opposite only if *resuscitate* meant to live.

4-2. **B.** Something *mitigated* has become less severe or painful. Something *aggravated* has become worse. *Raised* merely indicates a direction of movement, but not whether the movement is for better or worse.

4-4. **B.** Something *ubiquitous* is something found, or existing, everywhere (*ubique* = everywhere). **B** refers to one particular place and is therefore more nearly opposite than **A**, because *hiding* could refer to several locations.

4-5. **C.** To be *abstemious* is to be moderate in the use of food or drink (*ab* = from; *temetum* = strong drink). Clearly, the opposite is *gluttonous.*

5-1. **C.** The correct choice is *aftermath . . . cause.* The best clue in this sentence comes from the second part of the sentence. The logical activity of an arson squad *after* a fire would be to *uncover* a *cause.* None of the other second word choices fit the context in this case. From this second word, work back to the first.

5-2. B. Because the sentence ends with the metaphor *belly,* the first clause could also use a figure of speech that refers to a part of the body.

5-3. B. The noun associated with the Queen must accord with her silence, so **C** and **E** cannot be right. The President's verb must go with *happily,* so **A** and **D** will not work.

5-4. C. A remark to explain not having written a substantial essay would be an *apology,* and a remark about unfairness would tend to be *indignant.*

5-5. A. The correct answer is *facile . . . awkward.* The word *fundamental* is a definitional clue in this sentence. The first blank requires a word that is somewhat synonymous with this word. The signal word *although* sets up a contrast construction so that a word opposite in meaning to the first blank is required for the second. The only pair with a word that fits the first blank's definition and has a contrasting second term is **A.**

6-1. D. The best choice is *consequently.* The semicolon is needed to connect the two clauses. The second part of the sentence positively extends the quality of the novel stated in the first part. The connecting word *consequently* provides the direction needed to extend the meaning of the first part of the sentence.

6-2. A. The correct choice is *despondency.* Despondency is a noun indicating unhappiness.

6-3. C. The *but* makes clear that the missing verb should oppose *demanding* in the second half of the sentence. Either *relinquished,* **A**, or *waived,* **C**, makes sense, but in the context (war), the noun *reparations* is more suitable than *expenses.*

6-4. E. The required verb must follow logically the exploitation of resources. Choice **C** is possible, but *unchecked exploitation* suggests a stronger verb, such as *decimated.*

6-5. D. The correct answer is *trenchant.* This sentence's clue lies in the comparison. The answer must be similar to a *surgeon's scalpel.* The sharpness and keenness connoted by *trenchant* satisfy the context of the comparison.

7-1. C. *Luxuriant* (*luxus* = extravagance) means plentiful and is usually used to describe something that is abundant in growth. The opposite is *small. Miserly* is also opposite to plentiful, but because it refers to hoarding money, it is more nearly opposite to the idea of abundant wealth, not abundant growth.

7-2. E. *Plethora* generally means an overabundance; therefore, the opposite is *shortage. Modicum* is a possibility but is not as extreme as *shortage.*

7-3. C. *Laconic* refers to a response that is very short. Its opposite is *verbose,* which refers to using many words. *Compendious* refers to saying much in a few words.

7-4. D. *Ineffable* (*in* = not; *fab* = to speak), describing something that is inexpressible or indescribable. Its opposite is *definable,* which means capable of being described exactly. *Cogent* refers to something that is convincingly to the point.

7-5. B. *Mulct* means to deprive of a possession unjustly. It is a negative word, so its opposite is a positive one; the only clearly positive choice is **B.**

8-1. B. A *covenent* (*co* = together; *ven* = come) is a solemn mutual agreement. A *breach* is a violation of such an agreement.

8-2. E. *Precarious* describes an uncertain, often dangerous, situation. The most nearly opposite is *certain.*

8-3. A. *Contumacious* refers to defiance of authority. Its opposite is *compliant,* which refers to agreeing or giving in.

8-4. D. The adjective *ersatz* means substitute, artificial, false. Its opposite is *genuine.*

8-5. A. *Aestheticism,* is a belief in the supreme importance of art or beauty, and *philistinism* is a smug indifference to *aesthetics.*

9-1. A. *Sporadic* means happening from time to time, not regular; the antonym here is *constant.*

9-2. D. *Bellicose* (*bell* = war) means inclined to fighting, hostile, quarrelsome. Its opposite, then, is *peaceful. Calm* is not correct because a calm person is not necessarily a nonhostile person.

9-3. B. *Moribund* means dying, passing out of existence (*mori* = death). The opposite of a *moribund* patient is one who is *convalescent,* that is, recovering health.

9-4. D. *Insouciant* means carefree or without concern. *Concerned* is the nearest opposite.

9-5. E. The verb *eschew* means to avoid, to get away from; the antonym is *court*, to seek, to try to get.

10-1. D. *Reserve* is reticence. The antonym here is *loquacity,* a noun meaning talkativeness.

10-2. B. *Vacillation* means irresolution, wavering, or fluctuation. *Stability* is its antonym.

10-3. A. Something *soporific* induces sleep (*sopor* = sleep). The best opposite is *exciting,* **A**. *Terrific,* **B**, is a fair choice, but not so associated with stimulation and wakefulness as **A**.

10-4. C. A *factotum* is a handyman, jack-of-all-trades (*facere* = do; *totum* = all). The most nearly opposite, then, is the term that opposes the *factotum's* broad talent with narrow talent: *specialist.*

10-5. C. *Hie* means to move with haste. *Saunter* is to linger or move slowly.

11-1. A. *Initiate* (to begin) and *end* (to conclude) are verbs with opposite meanings. *Attend* (pay attention to) is the opposite of *ignore.*

11-2. C. The *loom* is the frame upon which a *tapestry* is woven. The *easel* is the support of the canvas upon which a painting is made.

11-3. C. A *tedious* conversation or person will produce *boredom,* as that which is *enigmatic* will produce *uncertainty.*

11-4. D. A person who *grovels* (fawns) may be described by the adjective *servile.* A person who *foresees* is *prescient* (knowing before).

11-5. A. *Banter* (playful language) is a synonym for *persiflage,* as *similarity* is a synonym for *analogy.*

12-1. C. To *deter* is to discourage; its antonym is to *encourage.*

12-2. A. Here, *flock* is a verb meaning to assemble in a flock; to *disperse* is an antonym.

12-3. A. *Wrangle,* a noun here, means a dispute or quarrel. The opposite is *concord,* harmony, agreement.

12-4. A. *Perfidy* means a breach of faith, or treachery. *Faithfulness* is its opposite.

12-5. B. *Tractable* (*tract* = to draw or pull) means easy to manage. Its opposite is *refractory,* which means difficult to manage, stubborn, obstinate. *Retractable* means capable of being withdrawn or denied.

13-1. E. A *scowl* and a *smile* are expressions of opposite feelings. The paired opposites here are *despair* and *hope.*

13-2. B. A *lecher* is a person characterized by the vice of *lust,* as a *glutton* is a person characterized by *greed* for food.

13-3. D. The verb here will correct the condition the noun describes. To *clarify* may alleviate *confusion;* to *mediate* may correct an *altercation* (a quarrel or dispute).

13-4. C. A *finch* (type of bird) is an object of study in *ornithology* (the study of birds), as a potsherd (fragment of pottery) is likely to be an object of study in *archeology* (study of ancient peoples).

13-5. E. A *rune* is a character in an ancient *alphabet,* a part of a whole, and a *star* is a part of a *constellation.*

14-1. A. A *moat* surrounds a *castle;* a *cummerbund* is an article of dress that goes around the *waist.*

14-2. B. The relation here is of 100 to 10: a *dollar* (100 cents) to a *dime* (10 cents) or a *century* (100 years) to a *decade* (10 years).

14-3. E. The *recipe* is the written set of directions from which the *chef* produces a dish; the *score* is the written account of the piece upon which a *musician* depends.

14-4. C. To *ossify* is to turn to *bone;* to *pulverize* is to reduce to *dust.*

14-5. C. The *nymph* and *faun* are female and male creatures of myth. The parallel here is *duck* and *drake.*

15-1. C. The correct answer is *still . . . medium.* The phrase *in spite of* suggests an enduring situation, unchanged by competition. The second word is practically defined by the phrase *communication between advertisers and customers.*

15-2. A. These two blanks contrast each other; the first tells what there has been, the second what there has not been (what has been lacking). The two choices that offer contrasts are **A** and **D**, and **D** may be eliminated because its terms are not appropriate to a *description.*

15-3. B. Those who are *uncritical* of *regulation* tend to hold *conventional* values. Along with this, *subsidization* (support) makes good sense.

15-4. D. The second blank is a noun for which institutions must be *blamed,* so **A** cannot be right. The missing adjective must fit a primitivist view of human nature, and a view of humans as blameless. The only positive adjective is *benevolent.*

15-5. A. The key phrase here is *land as the basic element of wealth;* land equals wealth in a *feudal* society. Thus, **A** is indicated.

16. C. Because the similar jargon was invented to avoid learning the difficult language of the Eskimos, it is logical to infer that the pidgin used in Asia was developed because of the difficulty of Chinese.

Team-LRN

17. **E.** The passage uses Eskimos to show how a "primitive" language may be large and complex.

18-1. **C.** The relationship here is one of opposites. *Ambiguous* (unclear or indefinite) is to *clear* as *synthetic* (false) is to *real.*

18-3. **C.** The *larva* is the early form of an animal that undergoes structural changes, not merely growth, when it becomes an *adult*—for example, a *tadpole* and a *frog.*

18-5. **C.** An *anachronism* is an error of time *period* where an object or event is represented in an era or period in which it does not belong. A *fallacy* is false reasoning, an error of *logic.*

19-1. **D.** To *dilate* is to expand, to swell. The antonym is to *contract.*

19-2. **B.** To daunt is to make afraid. *Undaunted* means fearless. The opposite here is *timorous,* fearful.

19-4. **C.** *Glib* refers to someone who speaks readily and easily. The opposite is *halting.*

19-5. **B.** *Vapid* is often used to refer to talk that is extremely dull; it is quite the opposite of *engaging,* which suggests an "interesting" quality more strongly than any of the other choices.

20-1. **C.** As a *helmet* is worn to protect the *head, goggles* are worn to protect the eyes. A *ring* is worn on the *finger,* but it is not the best answer because it is not worn for protection.

20-2. **A.** A *felony* is a more serious crime than a *misdemeanor.* The analogy is the more serious *blunder* as opposed to *mistake.*

20-3. **B.** One meaning of the noun *extract* is excerpt, or *quotation. Forecast* and *prediction* are also alike.

20-4. **B.** As a *slothful* person is not likely to *overwork,* a *mean* (stingy) person is unlikely to *overspend.*

20-5. **D.** A *wanton* life is licentious, an *ascetic* life, restrained. The analogy here is the opposition of *obstreperous* (boisterous) and *shy.*

21. **C.** Though the paragraph begins with the mention of petrified trees, the central issue is how the Andes mountains were formed.

22. **A.** Modern scientific discourse is likely to be less personal and use fewer figures such as this. There are no religious references in passage **B**, and reasoning from cause and effect **C**, comparing geological areas **D**, and terms such as *volcanic* or *strata* are common in both 19th- and 20th-century scientific writings.

23. **C.** The first paragraph supports answers **A**, **B**, **D**, and **E**. One of the points of the experiments described is to show that people will change their opinions *without* being given good reasons to do so.

24. **C.** The passage concludes that a change of judgment is likely to be based on a change of knowledge or assumptions about the topic.

25. **A.** Though the passage refers to ideas in choices **B**, **C**, and **D**, only **A** is the main point of the *whole* passage.

26. D. The passage gives us no information on the author's views of men as opposed to women. Answer **D**, referring to both men and women, is clearly implied by the last paragraph.

27-1. B. The use of *despite* with *staid appearance* suggests that the missing word must be un-like *staid.* The best choice is *volatile* (changeable, active).

27-2. A. The signal word is *seamen. Circumnavigate* (sail around) is something only a sea-man could know. None of the other choices has any relationship to either commerce or seamen.

27-3. E. The best choice is *comparing . . . expectations.* The signal clues are *unknown world* and *careful to note.* The phrase *careful to note* suggests careful thought or *comparing,* and *unknown world* suggests a meaning in this sentence that is best fulfilled by the word *ex-pectations.* In choice **B**, the word *refuting* is negative and does not convey the intended meaning of *careful to note.*

27-4. E. It makes good sense to conclude that a political institution would protect society from *external* forces—that is, those forces that threaten society as a whole. *Salient* (conspicuous, prominent) fits this meaning, too.

27-5. D. In this case, the second blank is easier to fill because it is followed by a definition; *relating the unfamiliar to the familiar by means of likeness* is definition of *analogy.* If you link *analogical* with *interpreting,* you note that myths do indeed interpret nature, that is, the beginnings of cultures and societies.

28-1. C. This adjective means with a sawlike edge; a leaf or a knife may be *serrated.* The op-posite is *smooth.*

28-2. D. The adjective *equivocal* means uncertain, undecided, doubtful; an opposite is *certain.*

28-3. B. The adjective *feral* means wild or untamed. Its opposite here is *domesticated.*

28-4. A. *Penury* is abject poverty, the opposite of *wealth.*

28-5. E. *Fealty* is loyalty or allegiance; the opposite is *infidelity.*

29-1. A. To *coalesce* is to grow together, to unite. The antonym is to *separate.*

29-2. E. *Servile* means submissive, humbly yielding, the opposite of *arrogant.*

29-3. D. The adjective *cognate* means related to, having the same quality or origin. The oppo-site here is *unrelated.*

29-4. B. The adjective *morbid* means unhealthy, diseased. Its antonym is *hale,* which means vigorous and healthy.

29-5. A. The adjective *maculate* means defiled, impure, the opposite of immaculate or *undefiled.*

30-1. D. A very *enthusiastic* adherent to a cause is a *zealot,* as a very *lazy* man or woman is an *idler.*

30-2. **A.** In this problem, *candy* is a verb meaning to preserve with *sugar.* The analogous *pickle* is a verb meaning to preserve with *brine.*

30-3. **D.** A *bibliographer* (a student of editions, publications, authorship) is likely to do his or her work in a *library,* as a *teacher* is likely to work in a *classroom.*

30-4. **E.** A *bellwether* is a leader of a *flock,* not merely a member. *Foreman* and *crew* is the closest analogy.

30-5. **B.** A *prolix* person is given to *verbiage* (wordiness); that is, the person is wordy or long-winded. The parallel is *fecund* (fertile) and *fertility.*

Quantitative Section

1-3. **A.** To find the number of ways 4 books can be arranged on a shelf, multiply $4 \times 3 \times 2 \times 1$ and get 24, which is greater than Column B.

2-2. **C.** The integer multiples of 8 greater than 8 but less than 50 are 16, 24, 32, 40, and 48. Column A is therefore 5. The integer multiples of 6 greater than 6 but less than 40 are 12, 18, 24, 30, 36. Therefore, Column B is also 5. The correct answer is **C.**

2-4. **B.** The easiest method is by inspection (and/or addition). Column A is approaching 2, but will not get there. Mathematically getting a common denominator and adding gives

$$1 + \frac{1}{2} + \frac{1}{4} + \frac{1}{16} + \frac{1}{32} + \frac{1}{64}, \text{ or}$$

$$1 + \frac{32}{64} + \frac{16}{64} + \frac{4}{64} + \frac{2}{64} + \frac{1}{64}$$

$$1 + \frac{55}{64}$$

$$\text{and } 1\frac{55}{64} < 2$$

3-1. **D.** Solving $x^2 = 36$ gives +6 and –6. Therefore, x can be equal to 6 or less than 6, making no comparison possible.

3-3. **D.** Trying some small values is required here, keeping in mind that x must be greater than 0. Let x = 1 then

$$3(1)^2 \qquad 2(1)^3$$
$$3(1) \qquad 2(1)$$
$$3 \quad > \quad 2$$

In this case, Column A is greater. Now try another value for x.

Let x = 2 then

$$3(2)^2 \qquad 2(2)^3$$
$$3(4) \qquad 2(8)$$
$$12 \quad < \quad 16$$

In this case, Column B is greater. Because there are different comparisons depending on the values chosen, the correct answer is **D**—cannot be determined.

3-5. B. Substitute x = 9 and y = 4 (note these are square numbers, and they can make solving easier when dealing with square roots).

$\sqrt{x} - \sqrt{y}$	$\sqrt{x - y}$
$\sqrt{9} - \sqrt{4}$	$\sqrt{9 - 4}$
$3 - 2$	$\sqrt{5}$
1	$<$ 2.23

Now try two other numbers. You will find that column B will always be greater.

4-1. (A) $\dfrac{\text{percent}}{100} = \dfrac{\text{is number}}{\text{of number}}$

$\dfrac{.25}{100} = \dfrac{x}{12}$ (crossmultiplying)

$100x = 3.00$

$\dfrac{100x}{100} = \dfrac{3.00}{100}$

$x = .03$ or $\dfrac{3}{100}$

4-2. C. In this type of problem (weighted average), you must multiply the number of students times their respective scores and divide this total by the number of students as follows:

$$15 \times 80 = 1200$$
$$\underline{10 \times 90 = 900}$$
$$25 2100$$

Now divide 25 into 2100. This leaves an average of 84%; therefore, the correct answer is **C**.

4-4. A. If 15 gumballs are picked from the bag, it is possible that 8 of them are red and 7 are green. On the next pick, however (the 16th), one is assured of having one gumball of each color.

4-5. B. Set up the problem as follows:

$$\frac{x + (2)}{x + 5 + (2)} = \frac{7}{12} \text{ or } \frac{x + 2}{x + 7} = \frac{7}{12}$$

By observation, x = 5 because $\dfrac{5 + 2}{5 + 7} = \dfrac{7}{12}$

Substituting into the original fraction

$\dfrac{x}{x + 5}$ gives $\dfrac{5}{5 + 5} = \dfrac{5}{10} = \dfrac{1}{2}$

A longer method is to solve $\dfrac{x + 2}{x + 7} = \dfrac{7}{12}$ as follows:

Cross-multiplying gives

$$12x + 24 = 7x + 49$$
$$5x = 25$$
$$x = 5$$

and then substitute in $\dfrac{x}{x + 5}$, or $\dfrac{5}{5 + 5} = \dfrac{5}{10} = \dfrac{1}{2}$

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Alternate method: Subtract 2 from the numerator and denominator of $\frac{7}{12}$ and then reduce.

5-1. D. Because x and y are not vertical angles and no other information is given, no comparison can be made. The correct answer is **D**.

5-2. A. Because there are 180° in a triangle and 92° in one angle, that leaves 88° to be split equally between two angles. Thus, angle y is 44°. (The degrees must be split equally, because angles across from equal sides are equal.) And the triangle has two equal sides (isosceles). The correct answer is **A**.
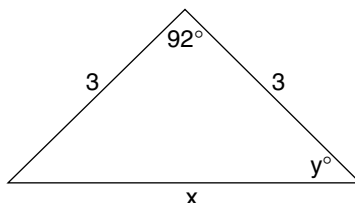
5-3. A. There are 9 diagonals in a hexagon, but only 6 sides.
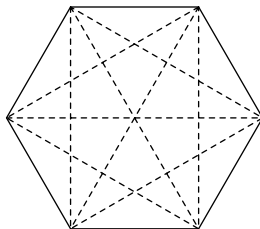
5-4. A. If the top angle was 90°, then x would be $3\sqrt{2}$. This could be calculated using the Pythagorean theorem.

$$a^2 + b^2 = c^2$$
$$3^2 + 3^2 = x^2$$
$$9 + 9 = x^2$$
$$18 = x^2$$

Therefore $\sqrt{18} = x$

Which simplified is $3\sqrt{2}$. But because the angle was originally larger than 90°, then the side across from 92° must be larger than $3\sqrt{2}$. The correct answer is **A**.
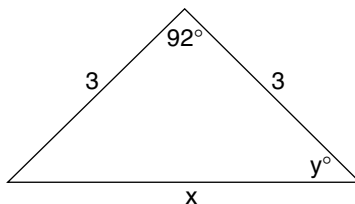
5-5. D. A rhombus is a parallelogram with all sides equal. Column A (length of side AB) then equals 5, because the area of a rhombus equals *bh* (20 = 4 × base). But we have no way of knowing whether diagonal AC is the "long" diagonal or the "short" diagonal. (See the alternate drawings that follow.)

"long" diangonal AC   "short" diangonal AC
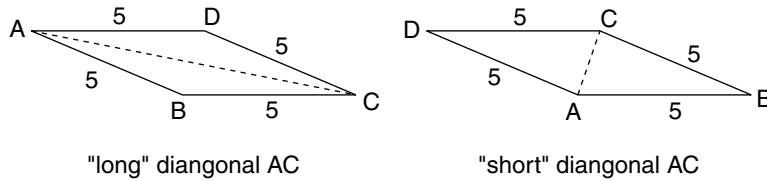
6-1. A. Because the sum of the angles is 180°, we have

$$m + n + 72 + 25 = 180$$
$$m + n + 97 \quad = 180$$
$$m + n \quad\quad = 180 - 97$$
$$m + n \quad\quad = 83$$

Hence, the sum of m + n is 83°.
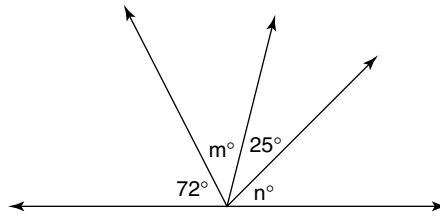
6-2. D. Breaking the figure into squares of side x by adding lines gives
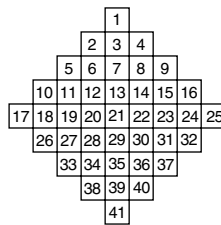
Remember that each square has area x^2. Then the total area is $41x^2$.

6-3. C. x + y = 180 (x plus y form a straight line, or straight angle) since x = (⅔)y, and substituting gives (⅔)y + y = 180. Multiplying by 3 leaves 2y + 3y = 540, and solving

$$5y = 540$$
$$y = 108$$

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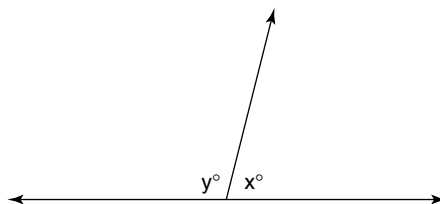
6-4. **D.** Circumference = πd

$$16\pi = \pi d$$

$$d = 16$$

diameter of circle = diagonal of square

area of square = ½ (product of diagonals)

$$= ½\, d_1 \times d_2$$

$$= ½\,(16)\,(16) = 128$$
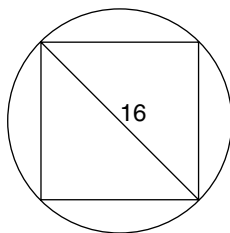
6-5. **D.** Because the surface area of side ABFE is 16, then each edge is 4. Now use the Pythagorean theorem to find the length of the diagonal that is also the length of the rectangle.

$$4^2 + 4^2 = AH^2$$

$$16 + 16 = AH^2$$

$$32 = AH^2$$

$$\sqrt{32} = AH$$
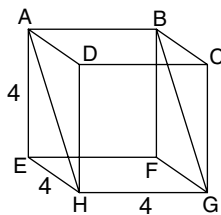
Simplifying, $\sqrt{32} = \sqrt{16 \times 2} = \sqrt{16} \times \sqrt{2} = 4\sqrt{2}$

Now multiplying length times width gives $4 \times 4\sqrt{2} = 16\sqrt{2}$

Notice that you may have recognized the ratio of a 45°:45°:90° triangle as $1:1:\sqrt{2}$ and found the diagonal quickly using $4:4:4\sqrt{2}$.

7-1. **D.** There are no conditions on which values we may plug in for x or y. Thus, if we use 0 for x and 1000 for y, then Column B is greater. But if we use 1000 for x and 0 for y, Column A is greater. So the answer is **D**.

7-2. **B.** On the number line, if x, y, and z are integers, then by inspection x = 1, y = −1, and z = 2. Substituting these values into each column gives

2 − 1 and 1 − (−1)

hence 1 < 2

Therefore, the correct answer is **B**.

7-3. B. Solve the first problem as follows:

x is 30% of 60

Replacing "=" for "is" and "·" for "of" (30% = $^3/_{10}$)

then x = ($^3/_{10}$) · 60

then x = 18

Solve the second problem as follows:

20% of y is 4

   (20% = $^1/_5$)

($^1/_5$) · y = 4

  ($^1/_5$)y = 4

Multiplying by $^5/_1$ gives ($^5/_1$) · ($^1/_5$)y = 4 · ($^5/_1$); then y = 20

7-4. B. Simplifying Column A by using the distributing property, leaves

$(x + 1)(x + 2)$ and $(x + 1)(x + 3)$

Canceling x + 1 from each side, leaves x + 2 and x + 3.

(This can be done because x > 0).

Then canceling x from each side gives 2 and 3.

Therefore, the correct answer is **B**, 2 < 3.

Alternate method: Try some values.

7-5. B. Solve each equation as follows:

$$x^2 + 2x + 1 = 0 \qquad\qquad y^2 - 2y + 1 = 0$$

Factoring gives $(x + 1)\,(x + 1) = 0 \qquad (y - 1)\,(y - 1) = 0$

                then x + 1 = 0   y - 1 = 0

                  leaves x = –1   y = 1

Therefore   x   <   y

8-1. A. b = Bob's age

   c = Jane's age

   d = Jim's age

Because Bob is older than Jane, you have c < b.

Because Bob is younger than Jim, you have b < d.

Hence, c < b and b < d, or c < b < d.

8-2. B. Solving the first equation for x as follows:

$\frac{2}{x} = 4$

2 = 4x

$\frac{2}{4} = x$

Therefore $\frac{1}{2} = x$

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Now solving the second equation for y,

$$\frac{2}{y} = 8$$

$$2 = 8y$$

$$\frac{2}{8} = y$$

Therefore $\frac{1}{4} = y$

Substituting these values for $x - y$ gives $\frac{1}{2} - \frac{1}{4} = \frac{2}{4} - \frac{1}{4} = \frac{1}{4}$

Therefore $x - y = \frac{1}{4}$, and the correct answer is **B**.

8-3. D. If $\frac{a}{b} = \frac{c}{d}$ then, by cross multiplying, you get $ad = bc$.

If $\frac{d}{b} = \frac{c}{a}$ then you get the same result by cross multiplying,

$ad = bc$.

Hence if $\frac{a}{b} = \frac{c}{d}$, then $\frac{d}{b} = \frac{c}{a}$

8-4. C. For $(a^2 - b^2)/(a - b) = a + b$ to be true, the denominator $a - b$ cannot equal zero, therefore a cannot equal b; $a > b$ is sufficient for this.

8-5. D. Let x = the missing number.

Because the average of x and z is y, we have

$$\frac{1}{2}(x + z) = y$$
$$2 \cdot \frac{1}{2}(x + z) = 2y$$
$$x + z = 2y$$
$$x + z - z = 2y - z$$
$$x = 2y - z$$

9-1. C. This comparison should be made without any actual computation as follows:

35% of 50	50% of 35
$.35 \times 50$	$.50 \times 35$

Because 35×50 is on each side, and each column's answer has two decimal places, the quantities are equal.

Or $\frac{35}{100} \times 50$	$\frac{50}{100} \times 35$

$$\frac{1}{100} \times 35 \times 50 = \frac{1}{100} \times 50 \times 35$$

9-2. A. By inspection both sides are exactly the same, *except* in Column A you are adding 4×10^2 and in Column B you are subtracting 4×10^2. Therefore, Column A is greater. Solving for values would give

$3^2 + 4 \times 10^2 - 4^2$	$3^2 - 4 \times 10 - 4^2$
$9 + 4 \times 100 - 16$	$9 - 4 \times 100 - 16$
$9 + 400 - 16$	$9 - 400 - 16$
$409 - 16$	$-391 - 16$
$393 \qquad > $	-407

9-3. **B.** In Column A, a fractional value (a value less than 1) is multiplied by itself many times. So its value becomes increasingly smaller. (For example, $\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$; $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$, and so forth.) In Column B, a number greater than 1 is multiplied by itself; its value grows larger. So Column B is greater.

9-4. **B.** First set up the numbers for each side:

Number of inches in 1 mile	Number of minutes in 1 year
(12 inches in 1 ft) $\times$	(60 minutes in 1 hr) $\times$
(5280 ft in 1 mile)	(24 hrs in 1 day) $\times$
	(365 days in 1 yr)
12×5280	$60 \times 24 \times 365$

Now dividing out, a 10 and 12 leaves

1×528	$6 \times 2 \times 365$
or 528	12×365

Column B is obviously greater.

9-5. **B.** In Column A, the probability of randomly drawing the first diamond is 13/52. Because that diamond is now out of the deck, the probability of drawing the second diamond is now 12/51. So the probability of the two events occurring together is (13/53) $\times$ (12/51). In Column B, the probability of first randomly choosing a heart, club, or spade is 39/52. Once one of those three suits is chosen, the probability of choosing one of the remaining two suits is 26/51. Finally, the probability of choosing a third suit is 13/50. So the probability of the 3 events occurring together is (13/52) $\times$ (12/51) $\times$ (13/50).

Column A   Column B

$$\left(\frac{\cancel{13}}{\cancel{52}}\right) \times \frac{12}{\cancel{51}} \qquad \frac{39}{\cancel{52}} \times \frac{\cancel{26}^{13}}{\cancel{51}} \times \frac{\cancel{13}}{\cancel{50}_{25}}$$

Canceling across columns, 12 is left in Column A, and (39/25) $\times$ 13 is left in Column B. Because in Column B, 13 is multiplied by a number greater than 1, B is greater.

10-1. **D.** Substituting 0 for x and 1 for y fits the condition $0 < x + y < 2$ $(0 < 0 + 1 < 2)$ and gives an answer of **B**, Column B is greater. Now substituting 1 for x and 0 for y also fits the condition $0 < x + y < 2 (0 < 1 + 0 < 2)$ but gives an answer of **A**, Column A is greater. Therefore, the correct answer is **D**. Because different values give different comparisons, no comparison can be made.

10-2. **C.** Simplifying columns A and B leaves $x^{16}y^{24} = x^{16}y^{24}$. Note that when you have a number with an exponent to a power, you simply multiply the exponents together.

10-3. **A.** Because a = 3b and b = –2, then a = 3(–2) = –6, substituting into the numerator of each expression (because the denominators are positive and alike, they can be eliminated)

$$\frac{a^2 + b}{a\cancel{b}} \qquad\qquad \frac{a + b^2}{a\cancel{b}}$$

$$(-6)^2 + -2 \qquad -6 + (-2)^2$$

$$36 + -2 \qquad\qquad -6 + 4$$

Therefore, 34 > –2.

10-4. **C.** Cross-multiplying the values in each column gives

$$\frac{\sqrt{3}}{3} \times \frac{1}{\sqrt{3}}$$

$$\sqrt{3} \cdot \sqrt{3} \qquad 3 \cdot 1$$

Therefore, $3 = 3$.

10-5. **A.** To make this comparison, it is necessary to factor Column A.

$$8^{29} - 8^{28}$$
$$8^{28}(8^1 - 8^0)$$
$$8^{28}(8 - 1)$$
$$8^{28}(7) \quad > \quad 8^{28}$$

11-1. **D.** Because two dimensions, length and width, are necessary to find the area of a rectangle, and only one dimension is given in each case, then no comparison is possible. The correct answer is **D**.
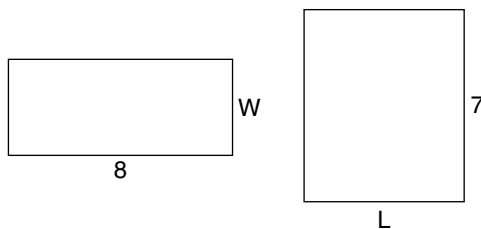
11-2. **A.** In the triangle, $\angle Z$ must be 60° and $\angle X$ is given as 30°. Because the side across from the larger angle in a triangle is the longer side, then XY > YZ.
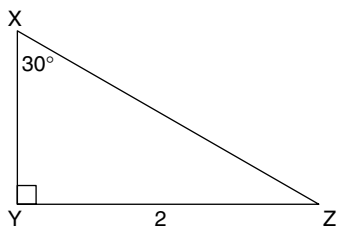
11-3. **D.** Volume of cube with side 6 is $6 \times 6 \times 6 = 216$. Volume of rectangular prism with 2 dimensions less than 6 is not determinable because the third dimension is needed. Therefore, no comparison can be made.

11-4. A. The following diagrams show 8 ways of going from A to B, and there are more.
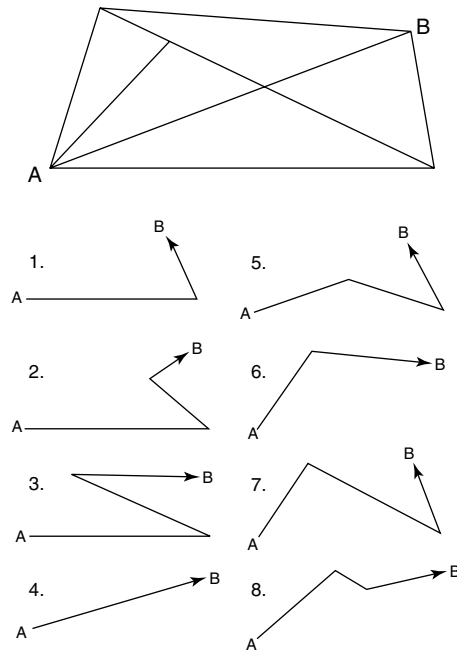
11-5. B. The ratio of the sides of a 30-60-90 triangle is 1, 2, $\sqrt{3}$, and because the side across from 30° is 2, the side across from 60° is $2\sqrt{3}$. Compare each column by squaring the number outside and multiply by the numbers under the radical.

$2\sqrt{3}$ $\qquad$ $3\sqrt{2}$

$\sqrt{3\cdot 4}$ $\qquad$ $\sqrt{2\cdot 9}$
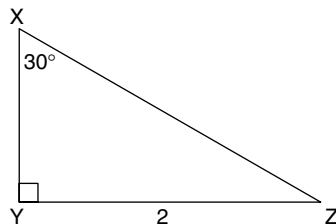
$\sqrt{12}$ $\ <\ $ $\sqrt{18}$

12-1. B. Substituting:

If x = 2, $x^3 - x^2 - x - 1 = (-2)^3 - (-2)^2 - (-2) - 1$

$\qquad\qquad\qquad = -8 - 4 + 2 - 1$

$\qquad\qquad\qquad = -12 + 2 - 1$

$\qquad\qquad\qquad = -10 - 1$

$\qquad\qquad\qquad = -11$

Hence $x^3 - x^2 - x - 1 = -11$

12-2. B. Because the square of a positive number is a positive number, choice **B** is the correct answer.

12-3. **A.** If x – 4 = y then y – x = –4

Hence $(y - x)^3 = (-4)^3 = -64$

12-4. **A.** $(-2,3) \otimes (4,-1) = [(-2)(4) - (3)(-1),(-2)(-1)]$

$$= [(-8) - (-3),(2)]$$
$$= (-5,2)$$

12-5. **D.** Set up the equation as follows: Let t be the length of time it will take the plane to overtake the bus; then $t + 4$ is the time that the bus has traveled before the plane starts. The distance that the bus has traveled by 1:00 p.m. is $50(t + 4)$, because distance equals rate times time $(d = rt)$. The distance the plane will travel is $300t$. Now equating these two (they will have to travel the same distance for one to overtake the other), gives $50(t + 4) = 300t$.

Solve the equation as follows:

$$50(t + 4) = 300t$$
$$50t + 200 = 300t$$
$$200 = 250t$$

Therefore $\frac{4}{5} = t$

$\frac{4}{5}$ of an hour ($\frac{4}{5} \times 60$) is 48 minutes. Hence it will take 48 minutes for the plane to overtake the bus; and because the plane is starting at 1:00 p.m., it will overtake the bus at 1:48 p.m.

13-1. **C.** $\frac{1}{20}$ equals $\frac{5}{100}$, which is equal to 5%.

13-2. **C.** Simplifying Column A by following the rules for priorities of operations (powers, square root, multiply, divide, add, subtract) gives

$$5 + 4 \cdot 10^2 + 8 \cdot 10^3$$
$$5 + 4 \cdot 100 + 8 \cdot 1000$$
$$5 + 400 + 8000 = 8405$$

13-3. **A.** Changing the form of Column A by squaring 3 and multiplying it by 2 to get everything under the radical sign leaves the simple comparison $\sqrt{18} > \sqrt{17}$.

13-4. **D.** For $x^4 - 1 = 0$, then x^4 must equal 1; x, however, may then be +1 or –1. If x = +1, then columns A and B will be equal. But if x = – 1, then Column B will be greater than Column A. So the answer is **D**.

13-5. **C.** Cross-multiplying, you get

$$xy = 4 - y$$
$$xy + y = 4$$
$$y(x + 1) = 4$$
$$y = \frac{4}{x + 1}$$

14. **C.** The increase was 94 – 84 = 10. The percent increase is found by dividing the increase by the *original* or *from* amount. Thus $\frac{10}{84} = 11.9\%$.

15. B. The maximum temperatures for July 10 to 16, 1979, were 92, 90, 84, 86, 94, 92, and 88. These average to just under 90 degrees. The 50-year average is also just under 90 degrees.

16-1. C. This is really an example of the distributive property of multiplication over addition.

By multiplying $(b + c)a$ you would get $ab + ac$.

Therefore the correct answer is **C**.

16-3. D. Substituting $x = 0$ and $y = 1$

$$
\begin{array}{ll}
(x - y)^2 & x^2 - y^2 \\
(0 - 1)^2 & (0)^2 - (1)^2 \\
\end{array}
$$

then 1 $>$ -1

Now substituting $x = -1$ and $y = 0$

gives
$$
\begin{array}{ll}
(-1 - 0)^2 & (-1)^2 - (0)^2 \\
(-1)^2 & (-1)^2 \\
\end{array}
$$

then 1 $=$ 1

Because different values give different comparisons, then no comparison can be made.

16-5. B. Simplifying each column leaves

$1/x^2$ $1/x^3$

Now substituting simple fractions such as $\frac{1}{2}$ gives

$$
\begin{array}{ll}
1/(1/2)^2 & 1/(1/2)^3 \\
1/(1/4) & 1/(1/8) \\
4 & 8 \\
\end{array}
$$

4 $<$ 8

Column B will always be greater.

17-1. A. $\frac{2}{3} = .666666\ldots$

So Column A $= 66.666666\ldots$ and

Column B $= 66.660$

Column A is greater.

17-2. B. Finding a common denominator is not necessary here. Make a partial comparison by comparing the first fraction in each column; $\frac{1}{71}$ is smaller than $\frac{1}{65}$. Now comparing the second fractions that are being subtracted, $\frac{1}{151}$ is greater than $\frac{1}{153}$. If you start with a smaller number and subtract a greater number, it must be less than starting with a greater number and subtracting a smaller one.

17-4. B. Column A is the percent drop in price, which is

$$\frac{\text{change}}{\text{starting point}} = \frac{5,000}{120,000} = \frac{5}{120}$$

Because $\frac{5}{100}$ is 5%, $\frac{5}{120}$ is less than 5%. Because column B is 6%, column B is greater.

17-5. C. For all numbers, $p\#q = \dfrac{p^2}{q}$

Then, if $p = -q$,

$$p\#q = \frac{(-q)^2}{q} = \frac{q^2}{q} = q$$

Both columns are equal.

18-1. D. Solve for x, $2x - 5 = 9$

$$2x = 14$$

then $\qquad\qquad x = 7$

Now substitute 7 for x.

Hence $3x + 2 = 3(7) + 2$

$$= 21 + 2$$

$$= 23$$

18-2. B. Ratio of $\frac{3}{10}$ to $\frac{5}{8} = (\frac{3}{10})/(\frac{5}{8})$

Multiply numerator and denominator by 40 (lowest common denominator)

$$\frac{40\left(\frac{3}{10}\right)}{40\left(\frac{5}{8}\right)} = \frac{12}{25}$$

Hence the ratio of $\frac{3}{10}$ to $\frac{5}{8} = \frac{12}{25}$

18-3. B. Because $a = p + prt$

$$a - p = p + prt - p$$

$$a - p = prt$$

$$\frac{a - p}{pt} = \frac{prt}{pt}$$

$$\frac{a - p}{pt} = r$$

$$r = \frac{a - p}{pt}$$

18-4. D. Because $x/y = \frac{3}{4}$, and $y/z = \frac{12}{13}$, cross-multiplying gives $4x = 3y$ and $12z = 13y$. Now solving each for x and z, respectively, $x = 3y/4$ and $z = 13y/12$. Hence

$$\frac{x}{z} = \frac{3y/4}{13y/12} = (3y/4) \times (12/13y) = \frac{9y}{13y} = 9/13$$

18-5. D. Because it takes the pipe t hours to drain the tank completely, it will drain 1/t part of the tank each hour.

Hence in 3 hours, it will drain 3(1/t), or 3/t, part of the tank.

19-1. **D.** The values for a and b must be positive (because of the location in the upper-right quadrant). But you cannot be sure whether the x value (a) is greater than the y value (b), or vice versa. (Remember, unless the points plotted fall on a line, their location cannot be precisely pinpointed. You can know only the quadrant.)
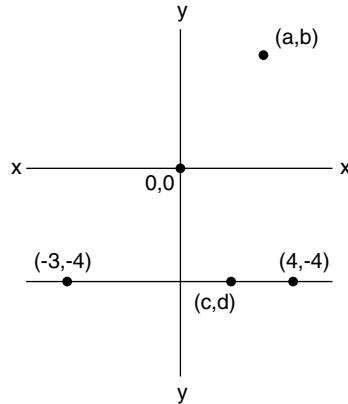
19-2. **B.** Because d is above the x axis, it must be positive, and c, being to the left of the y axis, must be negative. Therefore c < d, because all negatives are less than all positives.
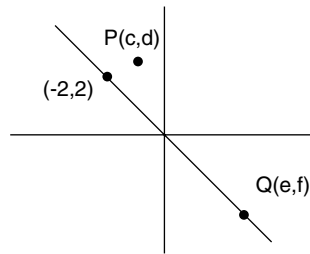
19-3. **D.** The values for x and y must be negative, but you cannot make a comparison between the two because their location cannot be pinpointed.
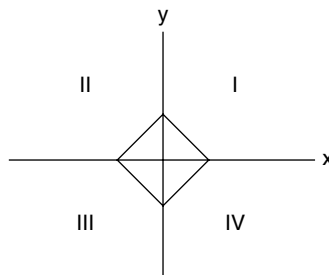
19-4. **B.** Point c,d falls on the y = –4 line before point 4, –4. So c is less than 4, and d = –4. So c + d must be negative; a and b must both be positive because of their location in the upper-right quadrant.
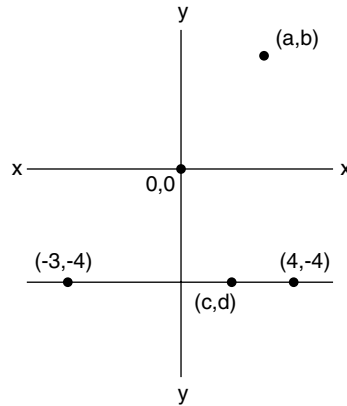
19-5. **A.** Because point P is above the line containing points (–2,2), then d (actual distance) is greater than ∥; therefore c + d is a positive number. Point Q is on the line; therefore e and f are additive inverses of each other, totaling 0. All positive numbers are greater than 0, so c + d > e + f.
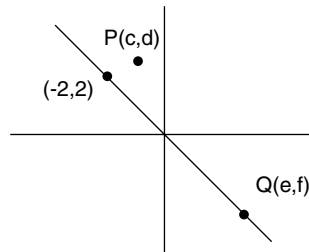
20. **A.** From the bottom graph, you see that make B amounted to about 60% of the total domestic sales in July. Thus, 60% of 1,220,000 is about 732,000.

21. **C.** In September, domestic auto sales were approximately 1150, and imports were approximately 175: 1150/175, or about 6½ to 1. None of the other choices is as high as this ratio.

22-1. **B.** Because XY = YZ = 10, then ΔXYZ is an isosceles Δ and ∠X = ∠Z. ∠Y = 84°, because it forms a vertical angle with the given angle.
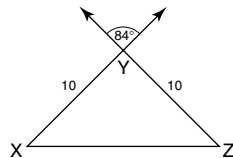
$$\angle X + \angle Y + \angle Z = 180$$
$$\angle X + 84 + \angle Z = 180$$
$$2(\angle Z) + 84 = 180$$
$$2(\angle Z) = 96$$
$$\angle Z = 48$$

Hence the measure of ∠Z = 48°.

22-3. C. Let

$$x = \text{length of equal sides in feet}$$
$$x + 8 = \text{length of base in feet}$$
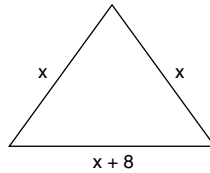
Because the perimeter is 89 feet, the equation is

$$x + x + (x + 8) = 89$$
$$3x + 8 = 89$$
$$3x + 8 - 8 = 89 - 8$$
$$3x = 81$$
$$\frac{3x}{3} = \frac{81}{3}$$
$$x = 27$$

Hence the length of the base is x + 8, or 35 feet.

22-5. B. Because ABCD is a rhombus, all sides are equal; therefore BC = CD = 6 and BC + CD = 12. AB = 6; minus AE ≅ 4, leaves 6 – 4 ≅ 2, which is the approximate length of BE. Adding 12 + 2 = 14, gives the distance around the rhombus that will be traveled. Now using the formula for circumference of a circle = $2\pi r$, or πd, leaves 6π as the circumference of the complete circle. Because the inscribed angle is 45°, arc DE is 90° (inscribed angle is half the arc it intercepts). This 90° will not be traveled, as it is in the interior of the figure; therefore only 270° of the 360° in the complete circle will be traveled, or ¾ of the circle. ¾ × 6π = 9π/2. This added to the original 14 gives answer **B** 14 + 9π/2.
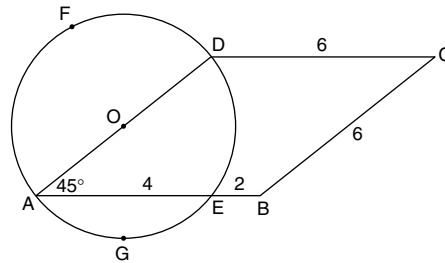

23-1. A. In any triangle, the largest side is opposite the largest angle. Side x is opposite the right angle (90°), so it must be the largest side.

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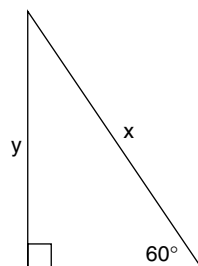
23-2. C. ∠CED is given as 40°. Note that $\overset{\frown}{BD}$ is the arc that ∠CED intercepts. A rule in geometry states that any inscribed angle equals half the arc it intercepts, so Column A equals Column B.
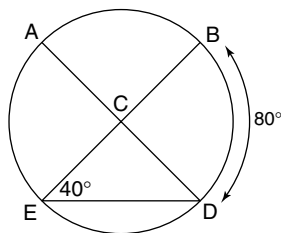
23-4. A. Because ∠BCD is an exterior angle of ΔCED, then it is equal to the sum of the remote angles (∠CED + ∠CDE). Therefore, it must be greater than one of them.
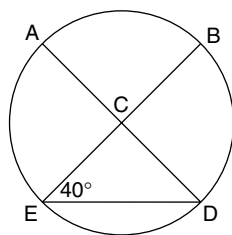
23-5. C. The triangle is a 30°, 60°, 90° triangle, which means that its sides are in proportion $1, \sqrt{3}, 2$. Because the smallest side (opposite the smallest angle, 30°) equals 2, then the other sides must be $2\sqrt{3}$ and 4. Thus x equals 4. So Column B, x/2, equals ½ or 2.
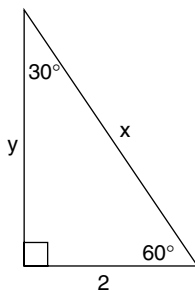
24-1. D. This problem is best solved by inspection or insight. Because there are two variables in this single inequality, there are many possible values for x and y; therefore a comparison cannot be made.

24-2. B. Substituting –1 for x gives $(-1)^3 - 1 = -1 - 1 = -2$. Now trying –2 for x gives $(-2)^3 - 1 = -8 - 1 = -9$. It is evident that this phrase will always generate negative values if x < 0. Therefore, the correct answer is **B**. The cube of a negative is negative. One less than a negative is negative. Any negative is less than 0.

24-3. B. Solving the information centered between the columns:

$$x^2 + 2x + 1 = 0$$
$$(x + 1)(x + 1) = 0$$
$$\text{So } x + 1 = 0$$
$$x = -1$$

Plugging in –1 for x in each column gives

Column A: $(x + 1)(x + 1) =$
$$(-1 + 1)(-1 + 1) =$$
$$(0)(0) = 0$$
Column B $(x - 1)(x - 1) =$
$$(-1 - 1)(-1 - 1) =$$
$$(-2)(-2) = 4$$

So Column **B** is greater.

24-4. B. Solving the systems of equations as follows by first multiplying the bottom equation by –5 gives

$$5x + y = 2$$
$$-5x + -15y = -30$$

Now adding equations leaves

$$-14y = -28$$

Therefore $y = 2$

Substituting $y = 2$ into the original second equation gives

$$x + 3(2) = 6$$

then $x + 6 = 6$

and $x = 0$

Therefore $x < y$

24-5. C. Simplifying the complex fraction in Column A as follows:

$$\cfrac{1}{1 + \cfrac{1}{1 + 1/n}} = \cfrac{1}{1 + \cfrac{1}{n/n + 1/n}} = \cfrac{1}{1 + \cfrac{1}{(n+1)/n}} = \cfrac{1}{1 + \cfrac{n}{n+1}}$$

$$= \cfrac{1}{\cfrac{n+1}{n+1} + \cfrac{n}{n+1}} = \cfrac{1}{\cfrac{n+1+n}{n+1}} = \cfrac{1}{\cfrac{2n+1}{n+1}} = \cfrac{n+1}{2n+1}$$

An alternate method would involve substituting simple numbers into each expression.

25-1. B. $\sqrt{48}$ is slightly less than $\sqrt{49}$. $\sqrt{49}$ is actually 7. Thus 7 is greater than $\sqrt{48}$.

25-2. A. Changing Column A to decimals

$$\tfrac{1}{3} \times \tfrac{2}{5} \times \tfrac{1}{8}$$

gives $.33\tfrac{1}{3} \times .4 \times .125$ which by inspection is greater than Column B.

Another method would be to change Column B to all fractions and then compare.

25-3. D. You have not been given enough information to compare Jill and Joan.

25-4. **C.** Begin by assigning a value to one of them, for example:

Dionne = 10. Now, because Tom is 3 inches shorter than Dionne, Tom must equal 7. Because Dionne is 1 inch shorter than Daniel, Daniel must equal 11. Because Joy is 4 inches shorter than Daniel, Joy must equal 11 – 4 = 7. Joy and Tom are equal.

25-5. **C.** Simplifying Columns A and B gives

$$\sqrt{3^{18}} \qquad \left(\sqrt{27^3}\right)^2$$

$$27^3$$

$$(3 \cdot 3 \cdot 3)^3$$

$$3^9 \quad = \quad (3^3)^3$$

The correct answer is **C**.

26-1. **D.** Notice that (9x + 6y) is exactly three times (3x + 2y). Therefore, (9x + 6y) equals three times 10, or 30.
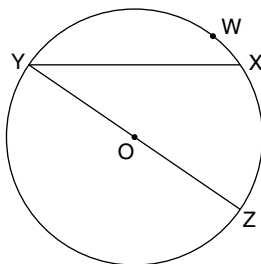
26-2. **A.** Because arc YXZ is a semicircle, its measure is 180°.

arc XZ = arc YXZ – arc YWX

= 180° – 100°

arc XZ = 80°

Because an inscribed angle = ½ (intercepted arc) you have

∠XYZ = ½ (arc XZ)

= ½ (80)°

= 40°

Hence ∠XYZ has a measure of 40°.

26-3. B. Area of larger circle = 144π

Because area = πr^2, then

$$\pi r^2 = 144\pi$$
$$r^2 = 144$$
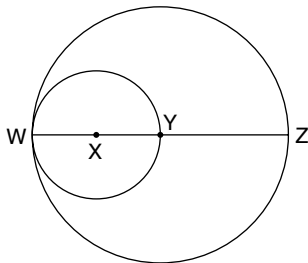$$r = 12$$

Radius of larger circle = 12

Diameter of smaller circle = 12

Radius of smaller circle = 6

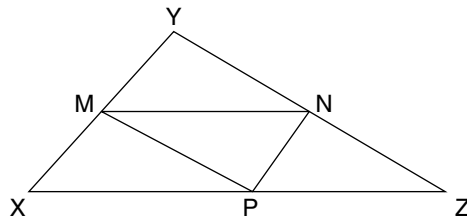Area of smaller circle = πr^2
$$= \pi(6)^2$$
$$= 36\pi$$

26-4. D. Perimeter of $\Delta MNP = \frac{1}{2}$ (perimeter of ΔXYZ)

$$= \frac{1}{2} (XY + YZ + XZ)$$
$$= \frac{1}{2} (10 + 15 + 17)$$
$$= \frac{1}{2} (42)$$

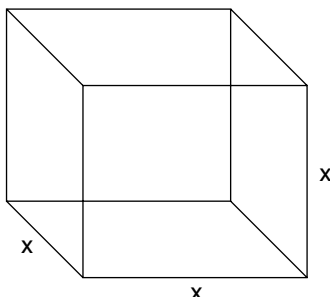Perimeter of $\Delta MNP = 21$

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26-5. **E.** Let x equal the length of a side of the cube. The volume $V = x^3$ and the surface area $S = 6x^2$.

Because $V = S$

$$x^3 = 6x^2$$

Hence $x = 6$

27-1. **C.** The dealer bought each watch at $23 and made a profit on each of $47. Therefore, the dealer sold each watch for $23 + $47 = $70. The gross income equals number of watches multiplied by unit price, or $85 \times \$70 = \$5950$.

27-2. **B.** This problem is most easily solved by working from the answers. Divide each of the answers by 5 and notice that choice **C** is eliminated, because it does not give a remainder of 1.

$$^{12}\!/_5 = 2r2; \ ^{16}\!/_5 = 3r1; \ ^{21}\!/_5 = 4r1; \ ^6\!/_5 = 1r1; \ ^{11}\!/_5 = 2r1$$

Now dividing the remaining choices by 3 gives

$$^{16}\!/_3 = 5r1; \ ^{21}\!/_3 = 7; \ ^6\!/_3 = 2; \ ^{11}\!/_3 = 3r2$$

The correct choice is **B**. 11, which when divided by 5 has a remainder of 1 and when divided by 3 has a remainder of 2.

27-3. **B.** If $^2\!/_3$ of the container is full, there remains $^1\!/_3$ of the container to fill. The time to fill $^1\!/_3$ of the container will be half as long as the time needed to fill $^2\!/_3$ of the container. Hence $^1\!/_2$ (18 minutes) = 9 minutes.

27-4. **B.** Start solving at the bottom right with the fraction 3/(3 + 3) and continue as follows:

$$3 + \cfrac{3}{3 + \cfrac{3}{3 + (3)/(3 + 3)}} \qquad\qquad 3 + \cfrac{3}{3 + \frac{6}{7}}$$

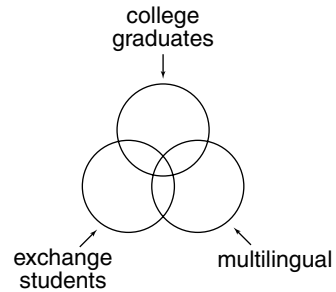$$3 + \cfrac{3}{3 + \cfrac{3}{3 + \frac{3}{6}}} \qquad\qquad 3 + \cfrac{3}{3\frac{6}{7}}$$

$$3 + \cfrac{3}{3 + \cfrac{3}{3\frac{1}{2}}} \qquad\qquad 3 + \cfrac{3}{\frac{27}{7}}$$

$$3 + \cfrac{3}{3 + \cfrac{3}{\frac{7}{2}}} \qquad\qquad 3 + \frac{21}{7}$$
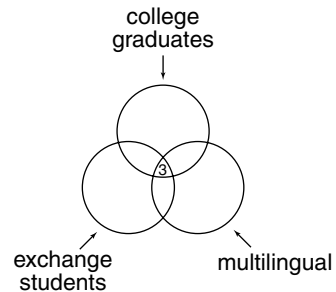
$$3\frac{21}{27} = 3\frac{7}{9}$$

27-5. **D.** Using Venn diagrams, you may diagram as shown.

The 3 college graduates who are multilingual and exchange students will occupy the space contained by all 3 circles.

The 4 noncollege graduates who are multilingual and exchange students will occupy the space contained by multilingual and exchange students, but not contained by college graduates.

Because there is a total of 15 college graduates, add so that the sum of the college graduates equals 15.
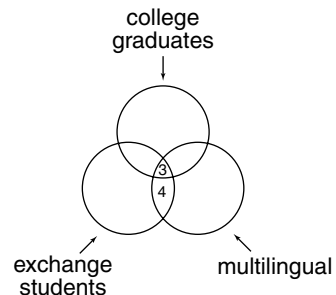
Because there is a total of 10 exchange students and a total of 8 multilingual, add as in the preceding.
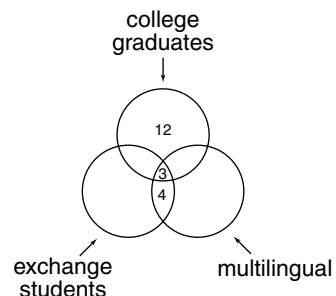
The total number of adults is 30. Because 23 are contained in the 3 circles (college graduates, multilingual, and exchange students), 7 are *not* graduates, multilingual, or exchange students.

2-4. D. If workers are allowed to choose, those workers who prefer the 4-day schedule and work well on it will not be joined by those who prefer the 5-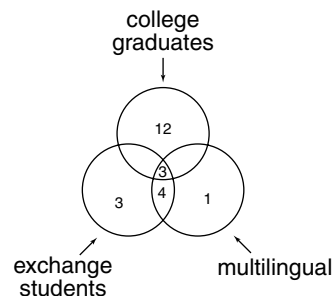day schedule and work better in those hours. If the randomly chosen sample is a true sample, the workers will be more productive when they select the schedule.

3. D. I and III only. Information in the question states that Wilson, Yussef, and Xavier work together 3 times from Monday through Friday. The only way this can happen if none of them works two or more days in a row is:

Monday	Tuesday	Wednesday	Thursday	Friday
WXY	—	WXY	—	WXY

This result leaves the remaining greenskeeper, Zachary, to trim the greens on Tuesday and Thursday.

4. C. During the period from Tuesday through Friday, it is possible that Xavier works twice as many days (2) as Yussef (1). It is not possible for all 4 greenskeepers to work together on a given day, because on the day before/after, none of them could work. Nor is it possible for any greenskeeper to work three times as many days as another, because this would mean working three out of the four days (Tuesday through Friday), which would require working two consecutive days.

5. E. I, II, and III. From the information in question:

Monday	Tuesday	Wednesday	Thursday	Friday
WXY	—	—	WXY	—

Because no one may work two consecutive days, Zachary must work alone on Tuesday, and Yussef must work alone on Wednesday and Friday.

6. C. If Wilson works alone on Wednesday, and exactly two greenskeepers work Monday, Tuesday, Thursday, and Friday, then:

Monday	Tuesday	Wednesday	Thursday	Friday
—	—	W	—	—
—	—		—	—

Notice that no matter who works Tuesday and Thursday, Wilson must be one of the two greenskeepers who works on Friday:

Monday	Tuesday	Wednesday	Thursday	Friday
W	—	W	—	W
—	—		—	—

If Zachary works on Monday, then Yussef and Xavier must work on Wednesday. But if Yussef works on Monday, then Zachary and Xavier work on Tuesday. Or Xavier could work on Monday, and Zachary and Yussef work on Tuesday. The same is true for Thursday and Friday. In all cases, Xavier, Yussef, and Zachary each work exactly two days.

7. **C.** If Quincy works only on Tuesday, then:

| Monday	Tuesday	Wednesday	Thursday	Friday
—	Q	—	—	—

If all four remaining greenskeepers work on Wednesday, then no greenskeeper can work on Thursday (because Quincy works only on Tuesday). So the maximum number of greenskeepers that can work on Wednesday is three.

8-1. **E.** Because the survey does not state that respondents regularly purchased *only* American toothpaste, *only* National toothpaste, or *only* Brighten toothpaste, the most reasonable inference is that some of the respondents questioned must have regularly purchased at least two different brands of toothpaste; exactly which ones you do not know. This would explain why the percentage totals more than 100%.

8-2. **B.** Choices **A**, **C**, **D**, and **E** would be logical conclusions. But entomologists who are skeptical about mimicry will not be "astonished" by a finding that supports their ideas.

8-3. **E.** Although **A** is partially true, it is correct only up to a seven, after which it is no longer correct. Only **E** accurately expresses the point of the passage: that group pressure can alter a subject's judgment.

8-4. **C.** General statistics for populations do not necessarily correlate to any one individual. For example, because 40% of the citizenry of the United States gives birth does not mean that every United States citizen (for example, a man) has a 40% chance to give birth.

8-5. **A.** The author maintains, in the last sentence, that the rain forest is *vital to the well-being and continuation of earth's fragile ecological system.* Therefore, the author implies that future generations depend upon the continued health of the rain forests.

9-1. **A.** The conclusion is to follow the question *And why not?* That is, why should a farmer continue to resist conservation? Because water is cheap, and no rewards for conserving are offered.

9-2. **B.** For the author to make conclusions about human behavior based upon observations of rat behavior, the author must assume that conclusions about human behavior can be based upon what is learned from rat behavior. None of the other choices is an essential assumption for the author's argument.

9-3. **D.** Because two trees are different, one may not therefore conclude that what is important for one tree will not necessarily be important for another. For example, two human beings may be different, but food, oxygen, and shelter are important for each. The passage incorrectly assumes that a thorough dousing of water is important *only* for young redwood saplings.

9-4. **C.** As stated in the catalogue, some undergraduates will, at the end of four years, have demonstrated the ability to write original material, either fiction or nonfiction. Although the other choices are possible, only **C** necessarily follows from the passage.

9-5. D. Choices **A**, **B**, **C**, and **E** are each possible, but none of them can necessarily be deduced. The only choice that is deducible ("must follow" or "necessarily true") is **D**.

For questions 10–13, from the information given, you could have drawn a simple diagram as follows:
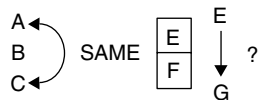
10. C. Choice **A** has the vacant floor on the bottom. Choices **B** and **E** do not have the Elgars and the Fertittas on adjacent floors. Choice **D** does not have the same number of floors between the Abrams and the Bakers as between the Cabots and DeLeons.

11. C. If the Fertittas live on the second floor, the Elgars must live on the third floor (on a floor adjacent to the Fertittas) so that the Grants can live on the first floor (a lower floor than the Elgars).

12. D. II and IV only. If the Abrams live on the sixth floor, the Bakers on the seventh floor, and the Fertittas on the fourth floor, a diagram can be drawn:

```
8
7 B
6 A
5
4 F
3
2
1
```

Because the Bakers live on an adjacent floor to the Abrams, so must the Cabots live on an adjacent floor to the DeLeons. That leaves floors 1 and 2 or floors 2 and 3 for the Cabots and DeLeons (or DeLeons and Cabots).

```
8
7 B
6 A
5
4 F
3      C/D
2      D/C    C/D
1             D/C
```

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Either way, the Elgars must be adjacent to the Fertittas, and the Grants must be on a floor lower than the Elgars.

8
7 B
6 A
5 E
4 F
3 C/D G
2 D/C C/D
1 G D/C

The Elgars are definitely on the fifth floor, and the top floor is vacant.

13. **A.** If the Cabots were to live on the sixth floor, then the DeLeons would have to live on the eighth floor so that the number of floors between the Abrams and Bakers equals the number of floors between the Cabots and DeLeons. But if floors 2, 4, 6, and 8 are taken by these 4 families, the Fertittas and the Elgars can't live on adjacent floors.

14-1. **E.** The author uses the particular case of *little Jimmy Jones* to argue for the passage of the bond measure.

14-2. **B.** The passage claims nothing but benefits from the changes, but the benefits have been to businesses, not to the individual consumer, whose rates have risen. Some of the other options neither support nor refute the argument of the passage.

14-3. **D.** The passage is arguing that the rich are *not* treated unfairly. And if most of the money collected in taxes is used *to protect or enhance* wealth, the rich are the ones who profit from taxes after they have been collected.

14-4. **E.** The statement does not say what a grade 1 or 2 apple will cost; it says only that grade 3s cost more than 39 cents. If a grade 4 apple costs more than a grade 3, it must cost more than 39 cents.

14-5. **E.** Only choice **E** introduces a fact strictly relevant to the argument that listening to the radio improves school performance. This fact contradicts the argument based on student claims.

For questions 15–18, from the information given, you could have noted the following:

O̶M̶
DH → M

If C then > than all others total

For every T̂, then 2

15. **A.** Using tomatoes requires using onions; using diced ham requires using mushrooms. But onions and mushrooms can never be used together.

16. **E.** Adding another cup of onions will make twice as many cups of onions as of tomatoes, which is required when tomatoes are used. Choices **B** and **C** contain diced ham but no mushrooms, which are required with diced ham. Choices **A**, **B**, **C**, and **D** do not have more cups of cheese than the total cups of other specially prepared ingredients.

17. D. Choices **A**, **B**, and **C** contain tomatoes without twice as many cups of onions. Choice **E** contains diced ham without mushrooms.

18. A. At least one more cup of cheese must be added so that the number of cups of cheese is greater than the total number of cups of all other specially prepared ingredients.

19-1 D. The passage begins with its conclusion that Biff is a great baseball player and then offers a supporting reason. If it takes a great player to lead the league in home runs, then Biff must be a great player, because he led the league in home runs.

19-2. C. Only III is true. A diminished reputation in the marketplace could hurt the Wombat company.

19-3. B. The commissioner is presented with a problem — a high crime rate — and the commissioner's reaction to it is to fight it by getting pay raises for city employees, which include the police. The commissioner therefore assumes that paying a police officer more will be instrumental in causing a lower crime rate.

19-4. A. The argument focuses narrowly on a single solution to a complex problem.

19-5. E. The passage does not consider a number of variables such as the number of children of divorced parents, if any, the stability of the population of New England, and the number of remarriages among the divorced. Only choice **E** does not seriously call the conclusion into doubt.

20-1. A. This question asks you to find a statement that is a logical conclusion derived from the passage. Choice **A** is the correct answer. Because ocean water is less saline than the water in the Great Salt Lake, swimmers in ocean water will be less buoyant. The passage supports this idea by stating that the greater the salinity level, the greater the buoyancy force.

20-2. B. To answer this question, you need to find the choice that is a logical inference from the statement about writers and editors. In other words, given the statement about writers and editors, what logically follows? Choice **B** is a logical extension of the original assertion. If it's rare for a good writer to be a good editor (and vice versa), it's also rare for a person to be good in *both* of these skills.

20-3. A. The first choice argues that all nonviolent criminals be offered this choice, but the law speaks only of *some.* Presumably, there are many crimes, even nonviolent ones, that should not be punished so leniently.

20-4. E. The argument of the passage is that lower capital gains taxes will increase the sale of stocks on which investors have realized capital gains. The assumption here is that these investors are not taking profits now because of the tax on capital gains.

20-5. E. Because Nathford University had an unusually high number of candidates and only a limited number of openings, the only definite conclusion you can reach is that Nathford has more candidates for openings than usual; hence, another constraint is the number of students the University can admit. All of the other choices are possible, but do not have to be true. Remember, a conclusion is something that must follow from the ideas in the passage.

From the information given for questions 21–24, constructing a simple chart may be helpful:

___	___	___	___	___	___	___	___	7 brown
F	F	F	F	F	M	M	M	4 spotted

21. **B.** Only II must be true. Because seven puppies are brown, the one nonbrown puppy could be either one of the males or one of the females. Therefore, I (All of the females are brown) is not necessarily true. Or the one nonbrown puppy could be male; therefore, only two male puppies are brown, so III (Three of the brown puppies are male) is not necessarily true. If four puppies are spotted, even if all three males are spotted, the fourth spotted puppy would be female. So only II must be true.

22. **E.** Because there are five females and only four spotted puppies, all five of the females cannot be spotted.

23. **D.** Because there are only four spotted puppies, all seven brown puppies cannot be spotted. Therefore, at least three of the brown puppies ($7 - 4 = 3$) cannot be spotted.

24. **C.** If there are four spotted puppies, there must be four nonspotted puppies. Because there are only three male puppies, all four spotted puppies cannot be male.

25-1. **B.** Here, only the Ku Klux Klan is an example of a group that would deny liberty to others but which has been granted its liberty by the supporting American Civil Liberties Union.

25-2. **B.** The paragraph focuses on the group of television watchers whose ignorance has proven invincible. The concern of the paragraph is not so much attitudes toward war as it is the effect of television news watching.

25-3. **D.** This conclusion attempts to explain the inconsistency between what many believe is true and conflicting statistical studies.

25-4. **D.** The chairpersons suggest that the operative criteria for choosing an executive for a divisional position are interpersonal and social skills. All other criteria (for example, business acumen and training) are unimportant. Choice **E** is not necessarily true, because more than one divisional executive candidate with interpersonal and social skills may be considered for the same position with only one executive chosen. The executive(s) not chosen for that one position may be less qualified than the candidate chosen but nevertheless may have interpersonal and social skills.

25-5. **C.** III only. The first sentence makes it clear that neither Mr. Tibbitts nor Ms. Mondragon will teach classes during the summer. However, nothing in the passage *assures* that Mr. Parnelli will also decide not to teach classes during the summer (. . . *of both Ms. Mondragon and Mr. Parnelli . . .*), and therefore you cannot conclusively deduce that Professor Revlon will teach classes during the summer. Only by knowing that Mr. Parnelli will not teach summer classes (III) do you then have all the pieces in place to conclude that Professor Revlon will teach summer classes and therefore cause confusion in the administrative office.

From the information given for questions 26–29 the following notes can be made:

D̷K   AL   DR

26. B. Because the Dino must be stored with the Rickenbacher, choices **A** and **D** are not possible. Because the Lear must be stored with the Airheart, choice **C** and **E** are not possible.

27. E. Because the Rickenbacher must be stored with the Dino, choice **E** is not suitable.

28. E. If the Kressna is the only single-wing airplane stored in the East warehouse, then the two pairs that must be stored together (Dino and Rickenbacher, Lear and Airheart) will be stored in the West warehouse (because at least seven airplanes are stored). Because the Lear and the Dino are two single-wings, at least three single-wings are stored.

29. B. If only the Dino and one other airplane are stored in the East warehouse, that other airplane stored with the Dino is the Rickenbacher. That means the other pair — the Lear and the Airheart — must be stored in the West warehouse along with the Kressna said to be stored and at least two more to bring the total airplanes stored to at least seven.

From the information given for questions 26–29 the following notes can be made:

DK   AL   DR   Singlewing — DKBL   Double — RAOW

26. B. Because the Dino must be stored with the Rickenbacher, choices **A** and **D** are not possible. Because the Lear must be stored with the Airheart, choices **C** and **E** are not possible.

27. E. Because the Rickenbacher must be stored with the Dino, choice **E** is not suitable.

28. E. If the Kressna is the only single-wing airplane stored in the East warehouse, then the 2 pairs that must be stored together (Dino and Rickenbacher, Lear and Airheart) will be stored in the West warehouse (because at least 7 airplanes are stored). Because the Lear and the Dino are two single-wings, at least three single-wings are stored.

29. B. If only the Dino and one other airplane are stored in the East warehouse, that other airplane stored with the Dino is the Rickenbacher. That means that the other pair — the Lear and the Airheart — must be stored in the West warehouse along with the Kressna said to be stored and at least two more to bring the total airplanes stored to at least seven.

30-1. A. The conclusion that people are driving faster, regardless of the speed limit, does not follow directly from Jimmy's observation that twice as many tickets are written by his police officer father. This conclusion is supported, however, if it is to be assumed that the number of tickets issued is directly associated with the over-the-limit speed at which people drive.

30-2. A. The conclusion of the passage concerns how the chimpanzees should be treated in a zoo and assumes that behavior in the wild and the zoo are related. None of the other options alludes to the zoo, and the most plausible alternatives, **B** and **C**, may be true, but *infrequently* or *safer* are less certain than the assumption of **A**.

30-3. B. Some of the other options may be true, but they cannot be inferred from this paragraph. The marked decline in the number of deaths because the act of suicide became more difficult to perform with household gas suggests that given more time to reflect, many people would change their minds.

30-4. C. If the Japanese earned 80% of the total profits with only 65% of the total sales, they must have made more profit on each sale than their competitors.

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30-5. **C.** Here, the cause (the pin) is a cause because of the effect (the pinprick), and so the effect (the pinprick) is treated as the origin of the cause (the pin). They are not identical, and they both exist, though not in the expected relation.

From the information contained in the conditions for questions 31–35, the following diagram can be drawn:

E	L	E	L	E	L
Jackson?	Jackson?	Klein	Landau?	Landau?	Morris
5 a.m.	6 a.m.	7 a.m.	8 a.m.	9 a.m.	10 a.m.
then	if	then			
Streamliner	Coast	Flyer	Beamer		
Zephyr	before	Coast			

31. **E.** I, II, and III. Jackson's train departs at either 5 a.m. or 6 a.m.; Landau's train departs at either 8 a.m. or 9 a.m. Therefore, there may be 2, 3, or 4 hours between Jackson's and Landau's trains.

32. **B.** Choices **A** and **E** are not possible because the Coast precedes the Zephyr. **D** is not possible because the Coast, an express, must depart at an odd-numbered hour. Choice **C** is not possible because if the Coast departs at 7 a.m., then the Streamliner, not the Flyer, must depart at 5 a.m.

33. **E.** If Klein rides the Streamliner (at 7 a.m.), then the Coast must depart at 9 a.m. (in order for the Zephyr to depart before the Coast does), and the Flyer must depart at 5 a.m.

34. **D.** None of the express trains (Flyer, Streamliner, and Coast) leave at an even-numbered hour, and the Beamer departs at 10 a.m.

35. **A.** The chart now looks like this:

E	L	E	L	E	L
Jackson	Klein	Landau?	Landau?	Landau?	Morris
5 a.m.	7 a.m.	9 a.m.	11 a.m.	1 p.m.	3 p.m.
					Beamer

It is not possible for Klein to ride the Coast, because this would make the Streamliner depart at 5 a.m. *and* make the Zephyr, which leaves before the Coast, also depart at 5 a.m.

Team-LRN

Another Practice Test

This section contains another GRE test. The practice test is followed by complete answers, explanations, and analysis techniques. The format, levels of difficulty, questions structure, and number of questions are similar to those on the actual GRE CBT.

The actual GRE CBT is copyrighted and may not be duplicated, and these questions are not taken directly from actual tests.

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VERBAL SECTION

General Directions: Your score on the verbal section will be based on how well you do on the questions presented and also on the number of questions you answer. Try to pace yourself so that you have sufficient time to consider every question. If possible, answer all 30 questions in this section. Guess if you need to. Select the best answer choice for each question.

Sentence Completion

Each blank in the following sentences indicates that something has been omitted. Considering the lettered words beneath the sentence, choose the word or set of words that *best* fits the whole sentence.

1. Though the city's downtown area is extremely _____, many areas in the _____ have not yet been affected by the economic slump.

   A. depressed . . . periphery

   B. prosperous . . . suburbs

   C. recessive . . . center

   D. overcrowded . . . country

   E. propitious . . . outskirts

Analogies

Each of the following questions gives you a related pair of words or phrases. Select the lettered pair that *best* expresses a relationship similar to that in the original pair of words.

2. JANITOR : BUILDING ::

   A. rider : horse

   B. fisherman : fire

   C. violinist : orchestra

   D. ranger : forest

   E. policeman : judge

3. COMPLAIN : SNIVEL ::

   A. circle : wind

   B. condole : slaver

   C. grieve : sulk

   D. equip : supply

   E. hasten : expedite

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4. PATRIOT : CHAUVINIST ::

   A. epicure : glutton

   B. pessimist : cynic

   C. taste : tang

   D. candidate : incumbent

   E. misanthrope : misogynist

Antonyms

Each word in CAPITAL LETTERS is followed by five words or phrases. The correct choice is the word or phrase whose meaning is most nearly *opposite* to the meaning of the word in capitals. You may be required to distinguish fine shades of meaning. Look at all choices before marking your answer.

5. TYRO

   A. mountaineer

   B. instigator

   C. virtuoso

   D. investigator

   E. dilettante

6. PIQUANT

   A. basic

   B. indigestible

   C. insipid

   D. strong

   E. svelte

7. REIN

   A. govern

   B. release

   C. dry up

   D. muddle

   E. insure

8. PROTOTYPE

   A. individual

   B. sycophant

   C. facsimile

   D. handwriting

   E. opponent

9. AGGREGATE

   A. part

   B. standoff

   C. prism

   D. seam

   E. individuality

10. When the Axel Corporation purchased the newspapers, their sales were at their _____ in both revenue and profit, but the recession has _____ the profitability of almost all media properties.

   A. height . . . undermined

   B. mean . . . improved

   C. zenith . . . increased

   D. bottom . . . destroyed

   E. nadir . . . extended

11. Believing that to lead her people she must walk behind them, leaving them free to set their own course, the Nicaraguan president has restored _____ politics and renewed the _____ spirit.

   A. economic . . . chauvinistic

   B. environmental . . . ecological

   C. conservative . . . legalistic

   D. open-market . . . entrepreneurial

   E. national . . . parochial

12. CLOY

   A. starve

   B. refuse

   C. club

   D. flay

   E. glut

13. Generally, Babylonian mythology lacks the _____ quality of the myth of Osiris; it is more earthbound and more materialistic.

   A. ancient

   B. anthropological

   C. artistic

   D. experiential

   E. transcendental

14. SWINDLE : GUILE ::

   A. commit : felony

   B. believe : opinion

   C. anticipate : foresight

   D. invest : profit

   E. argue : case

15. OBSEQUIOUS

   A. rough-hewn

   B. rustic

   C. antique

   D. rude

   E. parasitic

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Reading Comprehension

Questions follow each of the passages below. Using only the stated or implied information in each passage, answer the questions.

Questions 16–17

If you make a marked increase in the amount of light falling upon the normal eye, you observe an immediate adjustment of the iris to reduce the size of the
(5) pupil. This is called an unconditioned response, and the increased light is called an unconditioned stimulus. Now, if you make numerous trials taking care to sound a buzzer whenever the light is in-
(10) creased, the iris can be "taught," that is to say, conditioned, to reduce the pupil at the sound of the buzzer alone. This learned response is called a conditioned response and the sound of the buzzer, a
(15) conditioned stimulus.

Now, symbols are our most important conditioned stimuli, and successful communication depends upon comple-mentary conditioning, or complemen-
(20) tary experience. Just as we find ourselves shouting at listeners who do not speak our language, so by a similar irrational impulse we assume that those with whom we attempt to communicate
(25) are equipped with complementary sets of conditioned responses to our own common stock of symbols. It is easy to see the stupidity of expecting one who does not speak English to converse with
(30) you in English. It is not so easy to real-ize that one who does speak English may not have been conditioned to oper-ate with the same set of senses for the familiar terms common to your vocabu-
(35) lary and his.

16. The primary purpose of the passage is to

    A. define an aspect of a topic.

    B. reconcile differing theories.

    C. propose a topic for investigation.

    D. solve a puzzle.

    E. analyze a phenomenon.

17. The passage suggests that those who speak English attempting to comm-unicate with those who do not speak English are

    A. bound to fail completely.

    B. still dependent upon complementary responses to common symbols.

    C. likely to be more successful if they raise their voice.

    D. likely to be able to communicate where there are familiar words common to both speakers' vocabularies.

    E. subject to the limitations of third-party translations.

18. BAROMETER : AIR PRESSURE ::

    A. stethoscope : heartbeat

    B. compass : circle

    C. tachometer : blood pressure

    D. anemometer : wind speed

    E. hourglass : sand

19. EPIC : EPIGRAM ::

  A. opera : lied

  B. museum : exhibit

  C. manuscript : illumination

  D. column : pillar

  E. newspaper : press

20. Remarkably, the coastal wetland has been preserved in the midst of some of the state's _____ real estate.

  A. undesirable

  B. priciest

  C. undeveloped

  D. soggiest

  E. unsaleable

Questions 21–24

The Amblyrhynchus, a remarkable genus of lizards, is confined to this archipelago. There are two species, resembling each other in general form, one
(5) being terrestrial and the other aquatic. This latter species with its short, broad head and strong claws of equal length has habits of life that are different from those of its nearest ally, the iguana. It is
(10) extremely common on all the islands, throughout the group, and lives exclusively on the rocky sea beaches, being never found even 10 yards in-shore. It is a hideous-looking creature, of a dirty
(15) black color, stupid, and sluggish in its movements. The usual length of a full-grown one is about a yard, but there are some even 4 feet long; a large one weighed 20 pounds. On the island of
(20) Albemarle, they seem to grow to a greater size than elsewhere. Their tails are flattened sideways, and all four feet

are partially webbed. They are occasionally seen a hundred yards from shore
(25) swimming about.

It must not, however, be supposed that they live on fish. I opened the stomachs of several and found them largely distended with a minced seaweed of a
(30) bright green or a dull red color. I do not recollect having observed this seaweed in any quantity on the tidal rocks; I believe it grows at the bottom of the sea, at some distance from the coast. If this is
(35) the case, the object of these animals occasionally going out to sea is explained. The stomach contained nothing but the seaweed. A piece of crab in one might have got in accidentally, in the same
(40) manner as I have seen a caterpillar, in the midst of some lichen, in the paunch of a tortoise. The intestines were large, as in other herbivorous animals. The nature of this lizard's food, as well as the
(45) structure of its tail and feet, and the fact of its having been seen voluntarily swimming out at sea, absolutely prove its aquatic habits.

Yet there is in this respect one strange
(50) anomaly—namely, that when frightened it will not enter the water. Hence, it is easy to drive these lizards down to any little point overhanging the sea, where they will sooner allow a person to catch
(55) hold of their tails than jump into the water. Perhaps this singular piece of apparent stupidity may be accounted for by the circumstance that this reptile has no enemy whatever on shore, whereas at
(60) sea it must often fall prey to the numerous sharks. Hence, urged by a fixed and hereditary instinct that the shore is its place of safety, whatever the emergency may be, it takes refuge there.

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21. The author's conclusion that the marine lizard lives only on seaweed is based upon

    I. observation of the feeding habits.

   II. inferences from the size of its intestines.

  III. inferences from the content of its intestines.

    A. II only

    B. I and II only

    C. I and III only

    D. II and III only

    E. I, II, and III

22. It can be inferred that the lizards seen swimming at some distance from the shore

    A. are attempting to escape from marine predators such as sharks.

    B. are attempting to regulate the temperature of their bodies.

    C. have attempted to migrate from one island in the archipelago to another.

    D. have been feeding or are seeking food.

    E. have been feeding upon edible shellfish found in those waters.

23. A newly introduced, slow-moving land predator upon the marine lizards described in the passage would most likely

    A. initially be much less successful than a swiftly moving marine predator.

    B. be about as successful as a swiftly moving marine predator.

    C. be more successful than a swiftly moving marine predator.

    D. have to depend, at first, upon preying on the very young or very old marine lizards.

    E. be unable to survive on the archipelago.

24. The main purpose of the passage is to

    A. discriminate between marine lizards and land lizards.

    B. discuss the characteristics of herbivorous lizards.

    C. describe the author's visit to an archipelago.

    D. suggest a basis for an evolutionary theory.

    E. describe some notable features of a marine lizard.

Questions 25–26

A.S. Byatt calls her book *Possession: A Romance* to claim the latitude, the freedom from minute fidelity to historical truth that Hawthorne believed distin-
(5) guished the romance from the novel. Byatt's book tells two stories, one set in contemporary England and one in the Victorian era. Two 20th-century academics meet and fall in love while trying
(10) to unearth the story of a secret love affair between a Victorian poet who resembles Robert Browning and a writer whose poems may remind modern readers of Emily Bronte and Emily
(15) Dickinson.

Byatt is a great ventriloquist and has reproduced many pages of the Victorian couple's letters, diaries, and poetry. Indeed, some modern readers may find
(20) the excerpts from the poetry too much

(25) of a good thing, and several of the po-
ems run to genuine Victorian lengths.
This challenging work is crammed with
literary allusions, and in time a reader
will see an eerie correspondence be-
(30) tween the Victorian lovers and the mod-
ern man and woman who discover the
secrets of the past.

25. The author probably uses the words
"ventriloquist" and "reproduce" to
suggest the

A. period accuracy of the Victorian
sections.

B. unrealistic quality of the narrative.

C. lack of originality in the Victorian
sections.

D. inferiority of the modern sections
of the book.

E. book's use of literary allusions.

26. The effect of the reference to the
poetry's "genuine Victorian length"
is to

A. stress the period accuracy.

B. suggest the great length of the
excerpts.

C. indicate that the poetry is inferior
to the prose.

D. emphasize the tediousness of the
poems.

E. stress the superiority of the
Victorian sections of the book.

27. PROSELYTE

A. neophyte

B. electrolyte

C. delegate

D. apostate

E. renegade

28. AGGRIEVE

A. hamper

B. gladden

C. repulse

D. satirize

E. rejoice

29. FISH : FRY ::

A. lion : whelp

B. oatmeal : cookie

C. whale : pod

D. kitchen : cook

E. beef : steak

30. The comedy _____ from the
_____ of his huge size and the tiny
voice with which he speaks his lines.

A. accrues . . . harmony

B. diminishes . . . opposition

C. extends . . . contrast

D. decants . . . junction

E. derives . . . incongruity

IF YOU FINISH BEFORE TIME IS CALLED, CHECK YOUR WORK ON THIS
SECTION ONLY. DO NOT WORK ON ANY OTHER SECTION IN THE TEST.

STOP

Team-LRN

TIME: 45 Minutes

28 Questions

Directions: Your score on the quantitative section will be based on how well you do on the questions presented and also on the number of questions you answer. You should try to pace yourself so that you have sufficient time to consider every question. If possible, answer all 28 questions in this section. Guess if you need to. Select the best answer choice for each question.

Numbers: All numbers used are real numbers.

Figures: Figures are intended to provide useful positional information, but are not necessarily drawn to scale. Unless a note states that a figure is drawn to scale, you should not estimate sizes or measurements to solve these problems. Use your knowledge of math to solve the problems.

You can assume that angle measures are positive.

Assume that lines that appear straight are straight.

Unless otherwise indicated, figures lie in a plane.

Directions: You are given two quantities, one in Column A and one in Column B. Compare the two quantities and choose oval

- **A.** if the quantity in Column A is greater;
- **B.** if the quantity in Column B is greater;
- **C.** if the two quantities are equal;
- **D.** if the comparison cannot be determined from the information given.

Common Information: Information centered above both columns refers to one or both columns. A symbol that appears in both columns represents the same thing in each column.

Math Ability

Directions: Solve each problem in this section by using the information given and your own mathematical calculations, and then select the correct answer of the five choices given. Use the scratch paper given for any necessary calculations.

Remember that on the actual exam, the answer choices will not be lettered. You simply select the oval next to your choice.

1.

Column A	Column B
$\dfrac{.89 \times 57}{.919}$	58

  A. The quantity in Column A is greater.

  B. The quantity in Column B is greater.

  C. The quantities are equal.

  D. The relationship cannot be determined from the information given.

2.

Column A	Column B
Number of seconds in two hours	Number of hours in 50 weeks

  A. The quantity in Column A is greater.

  B. The quantity in Column B is greater.

  C. The quantities are equal.

  D. The relationship cannot be determined from the information given.

3. There are 36 students in a certain geometry class. If two-thirds of the students are boys and three-fourths of the boys are under six feet tall, how many boys in the class are under six feet tall?

  A. 6

  B. 12

  C. 18

  D. 24

  E. 27

4.

Column A	Column B
$\dfrac{10p + 20q}{3}$	$\dfrac{5p + 10q}{6}$

  A. The quantity in Column A is greater.

  B. The quantity in Column B is greater.

  C. The quantities are equal.

  D. The relationship cannot be determined from the information given.

5.
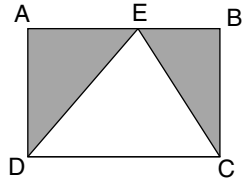
ABCD is a rectangle.
E is NOT the midpoint of segment AB

Column A	Column B
Area of triangle CED	Sum of areas of both shaded regions

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

6. If the area of a circular region equals exactly 4π square meters, which of the following is the circumference of that region?

A. 2π meters

B. 4π meters

C. 6π meters

D. 8π meters

E. Cannot be determined

7. $$x\sqrt{.09} = 2$$

Column A	Column B
7	x

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

8.

In the figure above, the sum of the values in the horizontal row equals the sum of the values in the vertical row. If z equals 5, what is the value of y?

A. 1

B. 3

C. 5

D. 11

E. Cannot be determined

9.

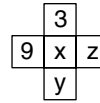| Column A	Column B
$(.4)^2$	$(\frac{1}{2})^4$

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

10. Four items cost \$30, \$38, p, and 2p. The average cost of all four items is \$32.

Column A	Column B
2p	\$40

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

GO ON TO THE NEXT PAGE

11.

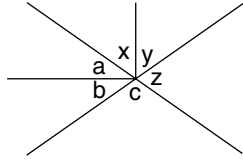| Column A	Column B
x + y + c	a + z + b

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

12. If x + y = m + rt, and r ≠ 0, then t =

A. $\dfrac{x+y+m}{r}$

B. $x+y+\dfrac{m}{r}$

C. $x-y+\dfrac{m}{r}$

D. $\dfrac{x-y}{r}-m$

E. $\dfrac{x+y-m}{r}$

13.
$$3x - 12y = 36$$

Column A	Column B
2x − 8y	21

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

14. Thirteen hundred subassembly units priced at 31¢ each are reduced for discount at a new price of 23¢ each.

Column A	Column B
Percent decrease in unit price of subassembly units	Percent decrease in number of sub-assembly units sold

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

15.
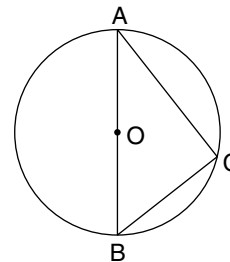
Column A	Column B
∠ACB	180° − (∠CAB + ∠ABC)

A. The quantity in Column A is greater.

B. The quantity in Column B is greater.

C. The quantities are equal.

D. The relationship cannot be determined from the information given.

Questions 16–17 refer to the graphs.

AMERICAN RECREATION SPENDING

1991 Recreation Dollar

films
23%

spectator
sports
39%

amusement
parks
11%

theater and concerts
11%

travel
16%

100% = $3600 million

U.S. Spectator Sports Spending
1991
(in millions)

$500
400
300
200
100
0

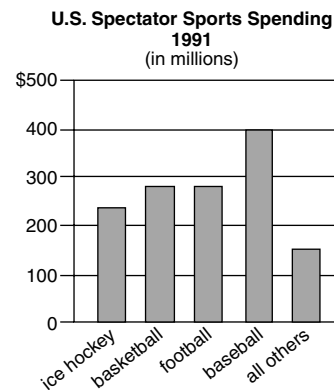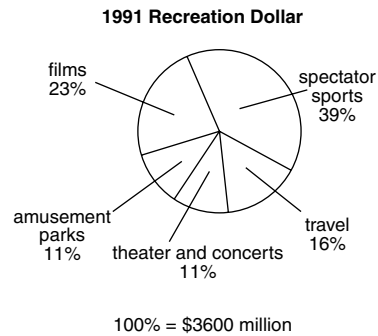ice hockey   basketball   football   baseball   all others

16. In 1991, approximately how much more was the American attendance at films than at amusement parks?

   A. $430 million

   B. $620 million

   C. $720 million

   D. $830 million

   E. Cannot be determined

17. Approximately what percent of the 1991 U.S. spectator sports dollar was spent on baseball?

   A. 10%

   B. 20%

   C. 25%

   D. 30%

   E. 39%

18. If $12 < 2x < 18$ and $-9 < 3y < 6$, which of the following are true?

   I. $3 < x + y < 11$

   II. $-12 < y - x < -4$

   III. $x > 7$

   A. I only

   B. III only

   C. II and III only

   D. I and III only

   E. I and II only

19. The average of three numbers is 55. The second is 1 more than twice the first, and the third is 4 less than three times the first. What is the largest number?

   A. 165

   B. 88

   C. 80

   D. 57

   E. 55

GO ON TO THE NEXT PAGE

Questions 20–21 refer to the graphs.

SCHOOL DISTRICT

Student Enrollment Breakdown
Northwood, California

Total Number White Enrollment
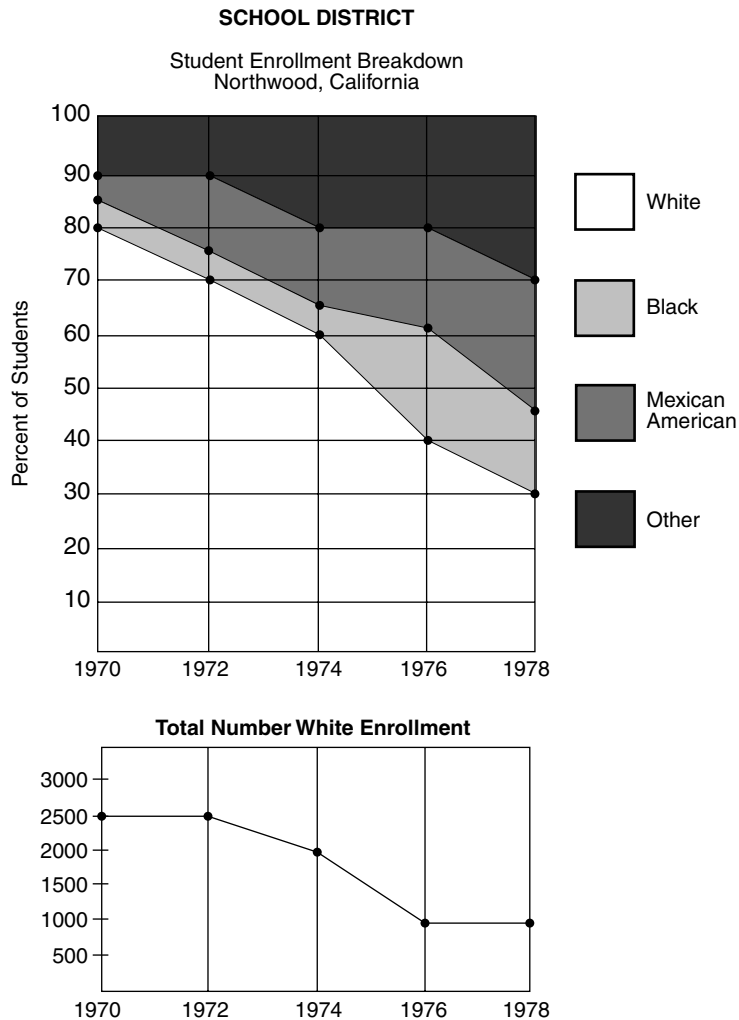
20. In which of the following years in the Northwood, California, School District did the number of white students exceed the number of students classified as "other"?

   I. 1974

   II. 1976

  III. 1978

   A. I only

   B. II only

   C. III only

   D. I and II only

   E. I, II, and III

21. What was the total student enrollment in 1976?

   A. 1000

   B. 2400

   C. 2500

   D. 4000

   E. 5000

N (0,8)

M (6,2)

0   K (2,0)   L (8,0)
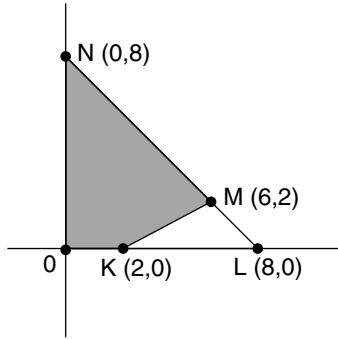
22. The area of the shaded region in the figure above is

    A.   6

    B. 12

    C. 26

    D. 32

    E. 64

23.
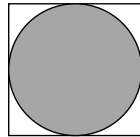
A noncompressible rubber ball exactly passes through a square hole, as shown above. The rubber ball is a perfect sphere. The diameter of the ball equals d.

Column A	**Column B**
The area of the hole	The perimeter of the hole

    A. The quantity in Column A is greater.

    B. The quantity in Column B is greater.

    C. The quantities are equal.

    D. The relationship cannot be determined from the information given.

24. x and y are different prime numbers

x is even

Column A	**Column B**
xy	x + y

    A. The quantity in Column A is greater.

    B. The quantity in Column B is greater.

    C. The quantities are equal.

    D. The relationship cannot be determined from the information given.

25. $z = 0$

$x = -y$

Column A	**Column B**
$10^x \cdot 10^y \cdot 10^z$	10^z

    A. The quantity in Column A is greater.

    B. The quantity in Column B is greater.

    C. The quantities are equal.

    D. The relationship cannot be determined from the information given.

GO ON TO THE NEXT PAGE

26.
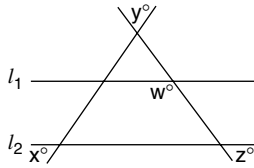
If $l_1 \| l_2$, x = 60, and w = 2z, then y + z =

A. 60°

B. 90°

C. 120°

D. 180°

E. Cannot be determined

27. Tom can plow a field in 12 hours, but with Pat helping him they can plow the field together in 8 hours. If Pat works alone plowing for 12 hours, how long will it take Tom working alone to plow the remainder of the field?

A. 3 hours

B. 4 hours

C. 4½ hours

D. 6 hours

E. 6⅔ hours

28. Three consecutive traffic signals each show either red or green. How many different arrangements of the three signals are possible? (Note: "red-red-green" is different from "green-red-red.")

A. 10

B. 9

C. 8

D. 7

E. 6

IF YOU FINISH BEFORE TIME IS CALLED, CHECK YOUR WORK ON THIS SECTION ONLY. DO NOT WORK ON ANY OTHER SECTION IN THE TEST.

STOP

Team-LRN

TIME: 60 Minutes

35 Questions

General Directions: Your score on the analytical section will be based on how well you do on the questions presented and also on the number of questions you answer. Try to pace yourself so that you have sufficient time to consider every question. If possible, answer all 35 questions in this section. Guess if you need to. Select the best answer choice for each question.

Directions: The following questions or groups of questions are based on a passage or set of statements. Choose the best answer for each question. It may be useful to draw rough diagrams or simple charts in attempting to answer some of these question types.

Average scores on standardized tests have been dropping for the last decade. This is not the fault of the students. The dissolution of the nuclear family has created instability for thousands of American children. And students need stability to fulfill their academic potential.

1. Which of the following, if true, would most weaken the preceding statement?

   A. In New Guinea, where fewer than 10% of all teenagers come from one-parent families, academic achievement is at an all-time high.

   B. Many more people took the tests recently than took them in the last year in which the scores rose.

   C. Fifty percent of all scholarship students at American colleges last year were from single-parent homes.

   D. Students from single-parent homes have even less disposable income than was formerly thought.

   E. Orphans tested the highest on standardized tests of any subgroup of students.

Environmentalists are concerned about dry-cleaning solvents such as perchloroethylene, which can harm the skin, pollute the air, and contaminate ground water. They are also hostile to plastic bags and wire coat hangers, which often end up in landfills. They recommend our buying clothes that will not require dry-cleaning; for example, those made of cotton or linen.

2. Which of the following, if true, most seriously weakens the argument made in this paragraph?

   A. Most of the detergents used to wash natural fabrics cause environmental damage.

   B. A decline in the sale of wood could seriously undermine the economy in New Zealand.

   C. More costly chemicals that do not have the dangerous side effects of perchloroethylene are in use in Europe.

   D. The availability of landfills in the most populous states will be exhausted in 5 years.

   E. The manufacture of nylon and rayon depends upon the availability of certain petrochemicals.

GO ON TO THE NEXT PAGE

Questions 3–7

At a postal exhibition, souvenir sheets are displayed in groups of 3. Each souvenir sheet depicts one of five countries: Rawanda, Ghana, Botswania, Ojaba, and Panama.

> Each display contains souvenir sheets depicting at least two countries.
>
> Panama and Ojaba souvenir sheets always are displayed together.
>
> Botswania and Ghana souvenir sheets are never displayed together.
>
> A display with a Rawanda souvenir sheet must also include a Ghana souvenir sheet.

3. Which of the following depictions of countries is a permissible display of three souvenir sheets?

   A. Botswania, Rawanda, and Ojaba

   B. Ojaba, Rawanda, and Panama

   C. Rawanda, Rawanda, and Ghana

   D. Botswania, Botswania, and Botswania

   E. Ojaba, Ojaba, and Ojaba

4. Souvenir sheets from which of the following countries CANNOT appear twice in the same display?

   A. Rawanda

   B. Ghana

   C. Botswania

   D. Panama

   E. Ojaba

5. All of the following can be displayed together EXCEPT

   A. two Ojaba souvenir sheets.

   B. two Panama souvenir sheets.

   C. two Rawanda souvenir sheets.

   D. one Rawanda souvenir sheet and one Botswania souvenir sheet.

   E. one Panama souvenir sheet and one Ojaba souvenir sheet.

6. A display that meets all the conditions will never contain which of the following two souvenir sheets?

   A. Rawanda and Panama

   B. Rawanda and Ghana

   C. Panama and Botswania

   D. Ojaba and Botswania

   E. Ojaba and Panama

7. Of the following pairs of souvenir sheets, which is the only pair that can be displayed along with a Rawanda souvenir sheet?

   A. Botswania and Ojaba

   B. Ojaba and Ojaba

   C. Panama and Ojaba

   D. Ghana and Ghana

   E. Panama and Panama

Many cases of childhood aphasia — the inability to use speech — have recently been reported cured by adopting an intervention called *assisted typing*. During
(5) assisted typing, an assistant holds the child's hand over a keyboard, while the child points to letters to spell words and create sentences. Using this technique, previously aphasic children have al-
(10) legedly uttered remarkable phrases. However, the latest investigation into assisted typing revealed that aphasic children were unable to answer any question correctly for which the assis-
(15) tant did not know the right answer.

8. Based on the preceding passage, the most likely explanation for the reported success of assisted typing is that

   A. aphasic children can use keyboards to communicate.

   B. a good typing assistant opens up a new world to many aphasic children.

   C. the press always exaggerate the cure of any childhood ailment.

   D. the assistant actually controls the typing.

   E. childhood aphasia eventually disappears.

For the last decade, studies have shown that on Christmas Eve, homeless shelters have been filled to full occupancy, whereas during other holidays, such as
(5) Easter and Memorial Day, the occupancy is less than half capacity. These findings demonstrate that Christmas is a holiday during which people become increasingly social and therefore tend to
(10) gather together for companionship.

9. Which of the following is an assumption that supports the conclusion in the preceding passage?

   A. Government funding for homeless shelters has increased in recent years and, as a result, shelter conditions have improved significantly making them much more appealing.

   B. Most homeless individuals visit shelters whenever possible in order to take advantage of free meals.

   C. During the Christmas season, harsh weather conditions and hot meals are not factors in homeless persons' decisions to go to a shelter.

   D. Shelters often provide job placement services.

   E. Homeless people visit shelters because they do not have close family and/or friends.

Questions 10–13

Nine baseball players are chosen for the All-Star squad. Four represent the Atlanta team, three from the Baltimore team, and two from the Chicago team.

In the batting order there are 9 spots, numbered from 1 through 9.

The manager arranges the batting order so that all four players from Atlanta bat consecutively, and the two Chicago players bat consecutively.

Analytical Section

10. If an Atlanta player bats in spot number 6, and a Baltimore player bats in spot number 8, in which spot must a Chicago player bat?

A. 1

B. 2

C. 3

D. 5

E. 7

11. The three players from Baltimore will bat consecutively if a player from Chicago bats in which spot number?

A. 1

B. 3

C. 5

D. 7

E. 9

12. Suppose one team has players batting in spot number 3 and spot number 6. Which one of the following must be a player from Atlanta?

A. 9

B. 8

C. 7

D. 4

E. 3

13. If the players batting in spot numbers 2 and 3 are from Baltimore and Chicago, respectively, a Baltimore batter could also be batting in which of the following spot numbers?

A. 4

B. 5

C. 6

D. 7

E. 8

14. Studies in performance psychology have shown that experts perform better when being observed, but novices perform worse when being observed.

The preceding passage implies all of the following EXCEPT

A. novices are more prone to performance anxiety than are experts.

B. the best performance will come from experts being observed.

C. the worst performance will come from novices performing alone.

D. an expert's performance improves when novices observe.

E. a novice's performance improves when experts observe.

Questions 15-18

Central Park has a railcar system that transports visitors to different "stops" in the park. There are four buses, numbered 1 through 4, which serve the 4 stops — the museum, the botanical garden, the amusement center, and the zoo — in the following way:

Bus 1 travels between the amusement center and the museum.

Bus 2 travels between the botanical garden and the museum.

Bus 3 travels between the amusement center and the botanical garden.

Bus 4 travels between the botanical garden and the zoo.

15. A trip using each of the buses exactly once will frequent each of the spots exactly once if it begins at which spot and ends at which spot?

A. It begins at M and ends at Z.

B. It begins at Z and ends at M.

C. It begins at B and ends at Z.

D. It begins at A and ends at M.

E. It cannot be done as stated.

16. If a family takes each bus exactly once, which of the following is a complete and accurate list of the stops where they must have stopped exactly twice?

A. botanical garden

B. amusement center and botanical garden

C. botanical garden and museum

D. botanical garden and zoo

E. botanical garden, museum, and zoo

17. Which one of the following sequences of buses is NOT possible?

A. 1 to 3 to 2 to 4 to 3

B. 2 to 1 to 3 to 2 to 1

C. 3 to 4 to 4 to 2 to 1

D. 4 to 2 to 2 to 4 to 4

E. 4 to 3 to 1 to 2 to 4

18. To go from the zoo to the amusement center in the fewest number of stops requires how many buses?

A. 1

B. 2

C. 3

D. 4

E. 5

Quick Nick Pickwick, a highly acclaimed efficiency expert, released the figures of his most recent research: During an average American lifetime, a person will spend 4 years talking on the phone, 8 years eating, and 6 months washing a car.

19. If the preceding passage is true, it must also be true that

A. Americans spend more time in a given day eating than talking on the phone.

B. by washing a car half as often, people can save a year of life.

C. at any given moment an American is more likely to be eating than talking on the phone.

D. when someone is talking on the phone, they are not eating at the same time.

E. talking on the phone is more important to most people than having a clean car.

Air-conditioning units in cars have been using CFC-based freon refrigerants for decades. Although effective in cooling and relatively inexpensive, CFCs have been known to be destructive to the earth's protective ozone layer, thus increasing the intensity of the sun's cancer-causing UV (ultraviolet) rays entering into the atmosphere. Due to recent research and development, new CFC-free refrigerants have been produced that have no effect on the ozone layer and are currently being used in the majority of new automobiles sold today. Therefore, all air-conditioning units containing CFC-based refrigerants should be replaced with the new CFC-free refrigerants as an additional measure to protect the environment.

GO ON TO THE NEXT PAGE

20. The preceding argument logically depends on which of the following assumptions?

   A. The staggering increase in rates of skin cancer are due to the weakening of the ozone layer by CFCs and the increase in harmful UV rays entering the atmosphere.

   B. Benefits of using CFC-free refrigerants to protect the earth's ozone layer are greater than the costs of replacing and disposing of old CFC-based refrigerants.

   C. Constant exposure to ultraviolet rays from the sun can lead to skin cancer.

   D. The recent popularity of environmentally conscious products indicates that the replacement of CFC-based refrigerants with CFC-free ones will be unanimously welcomed.

   E. The natural protective barrier of the ozone layer must be preserved at all costs in order to reduce the detrimental effects from hazardous rays entering the atmosphere.

Questions 21–24

Two children, David and Sarah, each pick four different numbers from 1 to 8. The numbers were picked according to the following conditions:

   David and Sarah may possibly pick some of the same numbers.

   For each child, if he or she did not pick 1, then he or she also did not pick 4.

   For both children, the numbers 3 and 5 are either both picked or both not picked.

   David picked exactly one of the numbers 7 and 8.

   Sarah picked both 7 and 8.

21. If David did not pick 3, then he must have picked which of the following numbers?

   A. 1

   B. 2

   C. 5

   D. 6

   E. 7

22. If among their picks, David picked exactly one number that Sarah did not pick, and Sara picked exactly one number that David did not pick, then those two numbers could be which of the following?

   A. 7 and 8

   B. 4 and 8

   C. 4 and 6

   D. 2 and 6

   E. 2 and 4

23. Which of the following four numbers could be picked by David?

   A. 2, 4, 7, 8

   B. 2, 6, 7, 8

   C. 2, 3, 6, 7

   D. 1, 4, 5, 6

   E. 1, 2, 4, 8

24. If Sarah picks 5, then which of the following numbers must be the ones she does NOT pick?

   A. 3, 4, 7, 8

   B. 2, 3, 4, 6

   C. 2, 3, 6, 8

   D. 1, 2, 3, 6

   E. 1, 2, 4, 6

When it comes to having a first tattoo, either people love it or hate it. Those who hate their tattoos sometimes seek removal, which is more painful than getting the tattoo and can never return the skin to its pristine state. However, people who love their tattoos usually get more of them, and many tattoo enthusiasts eventually run out of unadorned body space.

25. Which of the following statements, if true, supports the preceding assertion about opposing attitudes toward tattoos?

   A. It's rare to find someone with exactly two tattoos.

   B. People with multiple tattoos are socially constrained to say they like them.

   C. Getting a tattoo signifies taking control of one's body and one's life.

   D. People who get a quality tattoo the first time usually don't want to get another one.

   E. Most people who get many tattoos do it because of social pressure.

Questions 26–29

A 12-story office building is being built. Already, 7 companies have rented single floors: Manheim, Norton, Osborne, Polycorp, Quantech, Rudman, and Syscom. We know the following:

   Norton and Rudman are on adjacent floors.

   The third floor is rented.

   Quantech and Polycorp are separated by the same number of floors as are Syscom and Manheim.

   The tenth and eleventh floors are still vacant.

   The first two floors will be occupied by a large atrium.

26. Which of the following lists could represent the occupants of the floors from lowest to highest?

   A. Atrium, Atrium, Manheim, Rudman, Norton, Polycorp, Quantech, Osborne, vacant, Syscom, vacant, vacant

   B. Atrium, Atrium, Syscom, Manheim, Rudman, Norton, Polycorp, Quantech, Osborne, vacant, vacant, vacant

   C. Atrium, Atrium, Syscom, Rudman, Manheim, Norton, Polycorp, Osborne, Quantech, vacant, vacant, vacant

   D. Atrium, Atrium, Quantech, Syscom, Osborne, Manheim, vacant, Norton, Polycorp, Rudman, vacant, vacant

   E. Atrium, Atrium, Rudman, Norton, Syscom, Polycorp, Quantech, Osborne, Manheim, vacant, vacant, vacant

27. If Manheim is on the sixth floor, Rudman is on the fourth floor, and Polycorp is on the third floor, which of the following must be true?

   I. Norton is on the eighth floor.

   II. Quantech is on the ninth floor.

   III. Syscom is on the twelfth floor.

   A. I only

   B. II only

   C. III only

   D. II and III only

   E. I, II, and III

Analytical Section

28. Suppose that Syscom is no more than three floors above Quantech, and that Osborne, Polycorp, and Manheim are placed on the seventh, eighth, and ninth floors, respectively. Then which of the following must be true?

   A. Rudman is on the third floor.

   B. Syscom is on the sixth floor.

   C. Norton is on the third floor.

   D. Quantech is on the fifth floor.

   E. The twelfth floor is empty.

29. If Polycorp is placed on the twelfth floor, Quantech on the seventh, and Osborne on the third, which of the following floors must be vacant?

   A. 3

   B. 4

   C. 5

   D. 6

   E. 8

A recent survey of school-aged children indicates that children who attend summer camp in California are more enthusiastic about water sports such as swimming, canoeing, and sailing than children who attend summer camp in Maine. The National Director for Summer Camps Curriculum observed that California summer camps do a better job of teaching water safety, thus making children more confident around water. She concluded that camps in Maine can generate a similarly high level of enthusiasm for water sports if they incorporate a water safety program.

30. Of the following statements, the best criticism of the National Director's conclusion is that

   A. children who attend summer camps tend to come from higher socioeconomic backgrounds.

   B. water safety programs have been shown to increase enthusiasm for water sports in Boy Scout troops.

   C. the opportunities for water sports in Florida are greater than those in either California or Maine.

   D. children who attend summer camp in California have greater access to water sports from an early age.

   E. children who attend summer camp in Maine are less reckless than children who attend camp in California.

Questions 31–35

Seven dancers — Amy, Beth, Cindy, Donna, Eva, Filly, and Gina — each schedule an audition for the lead in the ballet. The first audition starts at 9 a.m. and the last audition starts at 3 p.m., with no breaks in between. Each audition lasts exactly one hour, and the dancers are scheduled as follows:

   Donna cannot audition at 9 a.m. or at 3 p.m.

   Amy must audition sometime before noon.

   Beth must audition just after Cindy.

   Eva must either audition at 9 a.m. or at 3 p.m.

   Filly must audition at 1 p.m. or later.

31. Which of the following is an acceptable schedule of auditions?

9 a.m.	10 a.m.	11 a.m.	12 N	1 p.m.	2 p.m.	3 p.m.
A. Amy	Gina	Cindy	Donna	Filly	Beth	Eva
B. Cindy	Beth	Amy	Donna	Gina	Filly	Eva
C. Donna	Gina	Amy	Cindy	Beth	Eva	Filly
D. Eva	Amy	Filly	Cindy	Donna	Beth	Gina
E. Eva	Donna	Cindy	Beth	Amy	Filly	Gina

32. If Cindy is scheduled for 9 a.m., which of the following dancers could be scheduled for noon?

- **A.** Amy
- **B.** Beth
- **C.** Donna
- **D.** Eva
- **E.** Filly

33. If exactly one dancer is scheduled between Amy and Filly, then the dancer scheduled between them must be

- **A.** Donna or Eva.
- **B.** Donna or Gina.
- **C.** Beth or Cindy.
- **D.** Beth or Gina.
- **E.** Cindy or Eva.

34. If Gina, Donna, and Amy are scheduled consecutively in that order, Beth must be scheduled at what time?

- **A.** 10 a.m.
- **B.** 11 a.m.
- **C.** 12 noon
- **D.** 1 p.m.
- **E.** 2 p.m.

35. If Filly is scheduled for 2 p.m., which of the following times is it NOT possible for Cindy to be scheduled?

- **A.** 9 a.m.
- **B.** 10 a.m.
- **C.** 11 a.m.
- **D.** 12 noon
- **E.** 1 p.m.

IF YOU FINISH BEFORE TIME IS CALLED, CHECK YOUR WORK ON THIS SECTION ONLY. DO NOT WORK ON ANY OTHER SECTION IN THE TEST.

STOP

Analytical Section

ANSWER KEY FOR PRACTICE TEST TWO

Answer Key for Practice Test Two

Verbal Section		Quantitative Section		Analytical Section	
1. **A**	16. **A**	1. **B**	15. **C**	1. **E**	18. **B**
2. **D**	17. **B**	2. **B**	16. **E**	2. **A**	19. **C**
3. **C**	18. **D**	3. **C**	17. **D**	3. **C**	20. **B**
4. **A**	19. **A**	4. **D**	18. **E**	4. **C**	21. **A**
5. **C**	20. **B**	5. **C**	19. **C**	5. **D**	22. **B**
6. **C**	21. **D**	6. **B**	20. **D**	6. **A**	23. **E**
7. **B**	22. **D**	7. **A**	21. **C**	7. **D**	24. **E**
8. **C**	23. **C**	8. **D**	22. **C**	8. **D**	25. **A**
9. **A**	24. **E**	9. **A**	23. **D**	9. **C**	26. **B**
10. **A**	25. **A**	10. **C**	24. **A**	10. **B**	27. **D**
11. **D**	26. **B**	11. **D**	25. **C**	11. **C**	28. **E**
12. **A**	27. **D**	12. **E**	26. **C**	12. **C**	29. **E**
13. **E**	28. **B**	13. **A**	27. **D**	13. **B**	30. **D**
14. **C**	29. **A**	14. **D**	28. **C**	14. **E**	31. **B**
15. **D**	30. **E**			15. **E**	32. **C**
				16. **A**	33. **B**
				17. **A**	34. **D**

418

CHARTING AND ANALYZING YOUR TEST RESULTS

Use the charts in this section to analyze the tops of problems you missed.

Identifying the type of question you most often miss will help you use your study time efficiently.

Verbal Section

Type of Question Missed			
	Possible	*Right*	*Wrong*
Antonyms	9		
Analogies	7		
Sentence Completion (SC)	6		
Reading Comprehension (RC)	8		
Totals	30		

Quantitative Section

Type of Question Missed			
	Possible	*Right*	*Wrong*
Quantitative Comparison	15		
Math Ability	9		
Graphs	4		
Totals	28		

Analytical Section

Missed Problem Types			
	Possible	*Right*	*Wrong*
Logical Reasoning (LR)	9		
Analytical Reasoning (AR)	26		
Totals	35		

# ANSWERS AND EXPLANATIONS FOR PRACTICE TEST TWO

Verbal Section

1. **A.** The first adjective should describe the effects of an economic slump; the missing noun is contrasted with the downtown. Though **B**, **D**, and **E** are plausible, only **A** has a proper adjective as well.

2. **D.** The *janitor* is the person in charge of the maintenance of *building* property. The parallel here is a *ranger* who is responsible for the *forest.*

3. **C.** To *snivel* is to whine or fret in a tearful manner, to *complain* with more unpleasant connotations. The relationship of the two verbs can be compared to *grieve* and *sulk,* in which the second verb adds a suggestion of sullen ill humor.

4. **A.** Until the late 20th century, the usual meaning of *chauvinist* was a fanatical *patriot.* The best parallel is an *epicure,* a person fond of pleasure in eating and drinking, and the excessive eater or drinker, a *glutton.*

5. **C.** A *tyro* is a beginner at some particular profession, occupation, or art. The best opposite is **C** because it describes someone who is advanced and accomplished at a particular profession.

6. **C.** *Piquant* means pungent or flavorful. *Insipid* means without sufficient taste.

7. **B.** To *rein* is to guide, control, or slow. The best antonym here is to *release.*

8. **C.** A *prototype* is an original, a model. The opposite here is *facsimile,* a copy or reproduction.

9. **A.** As a noun, *aggregate* means a total or whole, the antonym of *part.*

10. **A.** The *but* suggests that the first half of the sentence deals with a period before the recession when business is likely to be good, so either **A** or **C** is plausible. But the verb must be negative, so **C** can be eliminated.

11. **D.** The correct words must be consequences of the freedom described. Both *open-market* and *entrepreneurial* suggest the absence of government interference.

12. **A.** To *cloy* is to surfeit or satiate. The choice closest to an opposite is to *starve.*

13. **E.** The blank must be the opposite of *earthbound* and *materialistic.* The best choice is *transcendental* (transcending material existence).

14. **C.** *Swindle* is a verb (to deceive, to trick), and *guile* is a noun describing the craft of one who *swindles.* Someone with *foresight* is able to *anticipate* as someone with *guile* is able to *swindle.*

15. D. *Obsequious* means extremely submissive and polite. The most nearly opposite is *rude.*

16. A. Though **C** is a possible response, the best option here is **A**. The subject of the passage is the role of symbols in communication. Starting with that answer, choice **A** is better than **C** or the others.

17. B. The passage suggests that complementary responses to common symbols are crucial in communication, even when there is no common language.

18. D. A *barometer* is an instrument for measuring *air pressure* as an *anemometer* is an instrument for measuring *wind speed.* A *stethoscope* is a listening, not a measuring, device.

19. A. The *epic* is a long narrative poem; the *epigram* is a short, usually witty or satiric poem. Both are forms in which poetry is composed. *Opera* and *lied* are musical forms for the voice. *Opera* is normally a much larger (and longer) form than the *lied* (or song).

20. B. The adverb *remarkable* makes clear that the survival of the wetland is surprising. Only **B** makes sense in this context.

21. D. Because the lizard probably feeds at the sea bottom, the author has not observed its feeding habits. The second paragraph supports the two inferences.

22. D. The passage suggests that the lizards feed on seaweed and that seaweed grows at some distance from the coast.

23. C. Because the marine lizards would not flee into the water to escape the land predator, you can assume a land animal would be more successful than a marine predator.

24. E. The passage deals with a specific marine lizard, not with **B**, herbivorous lizards in general. It says hardly anything at all about land lizards, **A**.

25. A. The passage wishes to praise the accuracy of the Victorian excerpts, and *ventriloquist* and *reproduce* both suggest this precision.

26. B. The sentence calls the excerpts possibly *too much of a good thing* and genuinely Victorian in length.

27. D. A *proselyte* is one who has been convinced to adopt a new religion, political party, or opinion. An *apostate* (*apo* = from; *sta* = stand) is one who forsakes a former system of beliefs. A *renegade* is a deserter from an army or tribe; because a *renegade* does not necessarily desert beliefs, the word is not a near opposite of *proselyte.*

28. B. To *aggrieve* is to cause grief or injury to, the opposite of *gladden.* There is a difference between *grieve* and *aggrieve.*

29. A. The difficulty here is the meaning and part of speech of *fry*. The noun here means the young of fish, so the parallel is *lion* and *whelp.*

30. E. The use of *huge* and *tiny* suggests that the second blank cannot be **A** or **D**. Of the three remaining options, the most logical is clearly **E**.

Quantitative Section

1. **B.** By inspection, if you multiply $(.89/.919) \times 57$, this must be less than 57 (as you are multiplying 57 by a fraction less than 1). Therefore it must be less than 58. The correct answer is **B**.

2. **B.** Number of seconds in two hours   Number of hours in 50 weeks

   $60^{min} \times 60^{sec} \times 2$ hrs $24^{hrs} \times 7^{days} \times 50$ weeks

   7200 $<$ 8400

3. **C.** Because two-thirds of the students are boys, $\frac{2}{3}(36) = 24$ boys are in the class.

   Out of the 24 boys in the class, three-fourths of them are under six feet tall or $\frac{3}{4}(24) = 18$ boys under six feet tall.

4. **D.** If p and q each equal 1, then Column A equals 10 and Column B equals $2\frac{1}{2}$. But p and q may each possibly equal 0, in which case the value of each column would be 0, and so the columns would be equal. Therefore, a definite relationship cannot be determined.

5. **C.** It does not matter that E is not the midpoint of $\overline{AB}$. The area of ΔDEC equals $\frac{1}{2}(\text{base})(\text{height}) = \frac{1}{2}(\overline{DC})(\overline{AD})$. Notice that this area is half the area of the rectangle, which leaves the other half as the shaded regions.
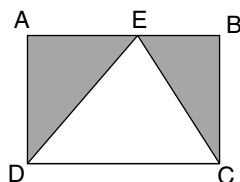
6. **B.** If the area of the circular region equals 4π, then

   $A = \pi r^2$

   $4\pi = \pi r^2$

   $4 = r^2$

   $2 = r$

   Now, using the formula for circumference of a circle:

   $C = 2\pi r$

   $C = 2\pi(2)$

   $C = 4\pi$

7. **A.** Solving the equation

   $x\sqrt{.09} = 2$

   $x(.3) = 2$

   dividing by .3,

   $$\frac{x(\cancel{.3})}{(\cancel{.3})} = \frac{2}{.3}$$

   $x = {}^{20}\!/_3 = 6\frac{2}{3}$

   Therefore $7 > 6\frac{2}{3}$

8. D. Because horizontal = vertical then

$$3 + x + y = 9 + x + z$$

If z equals 5, and canceling x's from each side:

$$3 + y = 9 + 5$$
$$y = 9 + 5 - 3$$
$$y = 14 - 3$$
$$y = 11$$

9. A. Column A is:

$$\left(\frac{4}{10}\right)\left(\frac{4}{10}\right) = \frac{16}{100} = \frac{4}{25}$$

Column B is:

$$\left(\frac{1}{2}\right)\left(\frac{1}{2}\right)\left(\frac{1}{2}\right)\left(\frac{1}{2}\right) = \frac{1}{16}$$

Because $\frac{4}{25}$ is greater than $\frac{1}{16}$, Column A is greater.

10. C. If the average cost of 4 items is $32, the items total $4 \times 32 = \$128$. So:
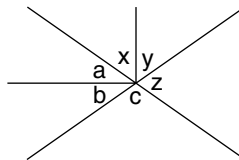
$$30 + 38 + p + 2p = 128$$
$$68 + 3p = 128$$
$$3p = 128 - 68$$
$$3p = 60$$
$$p = 20$$

Therefore, $2p = \$40$. The columns are equal.

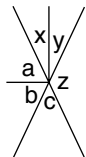**11. D.** The angles in Column A (x, y, c) sum to the total of both vertical angles running up and down. The angles in column B (a, z, b) sum to the total of both vertical angles running side to side.

Because the diagram is not drawn to scale, it may look like this, in which case Column A would be greater.
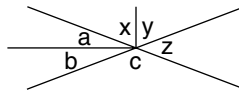
Or like this, in which case Column B would be greater.

Or they could be equal.

Team-LRN

12. E. If $x + y = m + rt$, solving for t:

$$x + y - m = rt$$

$$\frac{x + y - m}{r} = \frac{rt}{r}$$

$$\frac{x + y - m}{r} = t$$

13. A. Dividing the equation by 3 gives $x - 4y = 12$; now multiplying this result by 2 gives $2x - 8y = 24$. Therefore, Column A is 24, which is greater than B.

14. D. Because no information is given regarding the change in numbers of units sold, not enough information is given to determine Column B.

15. C. Because triangle ABC is inscribed in a semicircle, angle C is 90°. Because there are 180° in a triangle, the sum of the remaining angles, $\angle CAB$ and $\angle ABC$, must total 90°. Therefore, the correct answer is **C** because $180 - 90 = 90$.

16. E. The graphs show the number of dollars spent, not attendance. No information is given for numbers in attendance. Because one cannot assume that admission prices are the same for films and amusement parks, the answer cannot be determined.

17. D. Adding all the bars gives the total for spectator sports spending: $230 (ice hockey) + $280 (basketball) + $280 (football) + $400 (baseball) + $150 (all others) = $1340 million. Baseball is $400 million out of $1340 million, or approximately 30%.

18. E. Divide the first inequality by 2 and you get $6 < x < 9$. Divide the second inequality by 3 and you get $-3 < y < 2$. If you add these two inequalities, you see that statement I is true. If you take these two inequalities and multiply the first by -1, you get $-6 > -x > -9$ or $-9 < -x < -6$. Now adding the two statements together, you get $-12 < y - x < -4$. So II is true.

19. C. Let x = first number

$2x + 1$ = second number

$3x - 4$ = third number

Because the average of the 3 numbers is 55, you have

$$\frac{x + (2x + 1) + (3x - 4)}{3} = 55$$

Multiplying both sides of our equation by 3, you get

$$x + (2x + 1) + (3x - 4) = 165$$

$$6x - 3 = 165$$

$$6x - 3 + 3 = 165 + 3$$

$$6x = 168$$

$$\frac{6x}{6} = \frac{168}{6}$$

$$x = \frac{168}{6}$$

$$x = 28 = \text{first number}$$

$$2x + 1 = 57 = \text{second number}$$

$$3x - 4 = 80 = \text{third number}$$

Hence the largest number is 80.

20. D. I and II only. In 1974, white students comprised 60%; other students comprised 20%; in 1976, white students comprised 40%; other students comprised 20%; in 1978, however, white students comprised 30% and other students also comprised 30%.

21. C. In 1976, there were 1,000 white students. This number was 40% of the total.

So 40% of x is 1000

or .40x = 1000

Dividing by .40 gives

$x = {}^{1000}/_{.40}$

x = 2500

Thus, the total must have been 2,500.

22. C. First find the area of the larger triangle. Its base is 8, and its height is 8, so its area is ½ base × height = ½(8)(8) = 32. Now find the area of the small triangle: Its base is 6, and its height is 2, so ½ base × height = ½(6)(2) = 6. Now, subtract the small triangle from the large triangle to find the shaded area: 32 – 6 = 26.
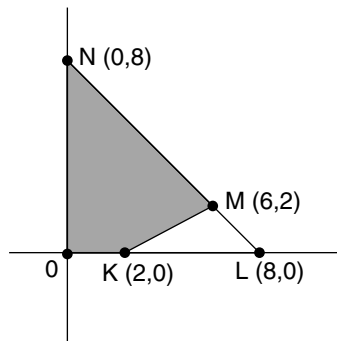
23. D. The distance across the hole equals the distance across the ball, which is the ball's diameter. Each side of the hole therefore equals d (the ball's diameter). So the perimeter of the hole = 4d. The area of the square equals d times d. Which is greater, 4d or d^2? If d = 4, Column A equals Column B.
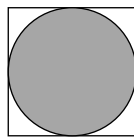
However, if d equals any value other than 4, the columns are not equal. So no definite relationship can be determined.

24. A. Two is the only even prime number. The lowest odd prime number is 3. So the least possible value of Column A is 6, which would be more than Column B, 5. Plugging in any other prime numbers will always give A greater than B.

25. C. To multiply similar bases with different exponents, retain the base and add exponents:

$$10^x \times 10^y \times 10^z = 10^{(x+y+z)} = 10^{(x+y)} = 10^0 = 1.$$

Therefore, both columns are equal.

Team-LRN

26. C. Because $l_1 \| l_2$, the corresponding angles formed on lines l_1 and l_2 are equal:
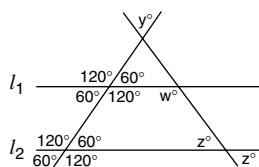
In any quadrilateral, the sum of interior degrees equals 360°. Therefore, $\angle w + \angle z = 180°$. If $w = 2z$, $\angle w = 120°$, and $\angle z = 60°$. Therefore:
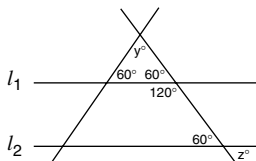
$\angle y = 60°$ (because there are 180° in a triangle). So the sum of $y + z = 60° + 60° = 120°$.

27. D. First determine Pat's rate alone by using the equation:

$$\frac{1}{\text{Tom's rate}} + \frac{1}{\text{Pat's rate}} = \frac{1}{\text{rate together}}$$

$$\frac{1}{12} + \frac{1}{p} = \frac{1}{8}$$

$$\frac{1}{p} = \frac{1}{8} - \frac{1}{12}$$

$$\frac{1}{p} = \frac{3}{24} - \frac{2}{24}$$

$$\frac{1}{p} = \frac{1}{24}$$

$$\text{so } p = 24$$

Now you know that Pat's rate alone is 24 hours. So if Pat works alone for 12 hours, he will have plowed exactly half the field. If Tom alone can plow the entire field in 12 hours, he can plow half the field in 6 hours.

28. C. There are 8 different arrangements, as follows:

red-red-red

green-green-green

red-green-green

green-red-green

green-green-red

green-red-red

red-green-red

red-red-green

Analytical Section

1. **E.** The passage establishes a chain of causality for academic success: stable families lead to stable children; stable children are able to fulfill their academic potential. And fulfilled academic potential is reflected by higher test scores. Choice **E** would weaken the statement, because orphans originate from homes in which neither parent is present.

2. **A.** If the laundering of the clothes made of natural fabrics such as cotton also causes environmental damage, the avoidance of dry-cleaning is undermined.

   From the initial conditions for questions 3–7 you could have drawn:

   Three souvenir sheets cannot all depict the same country.

   PO   G̶B̶   R → G

3. **C.** The easiest way to find the answer is by eliminating the incorrect choices. Choice **A** is wrong because Panama and Ojaba have to be together. Choice **B** is wrong because if Rawanda is displayed then Ghana must also be displayed. Choices **D** and **E** are wrong because three souvenir sheets cannot all depict the same country.

4. **C.** Suppose that two souvenir sheets in the display are Botswania. Because a Ghana souvenir sheet and a Botswania souvenir sheet cannot be in the same display, the third souvenir sheet must be either Panama, Ojaba, or Rawanda. However, each of these souvenir sheets (Panama, Ojaba, or Rawanda) requires another one of a different country to be in the same display. The Panama requires an Ojaba to be with it, and the Ojaba requires a Panama to be with it in the same display together. The Rawanda souvenir sheet must be with a Ghana souvenir sheet. Hence, a display cannot contain two Botswania souvenir sheets.

5. **D.** If a Rawanda souvenir sheet is in a display, then a Ghana souvenir sheet must also be in the same display. However, the Ghana souvenir sheet cannot be in the same display as a Botswania souvenir sheet. Thus, a Rawanda souvenir sheet and a Botswania souvenir sheet cannot be in the same display.

6. **A.** A Rawanda souvenir sheet requires a Ghana souvenir sheet, and a Panama souvenir sheet can only be with an Ojaba souvenir sheet. Therefore, a display with a Rawanda souvenir sheet and a Panama souvenir sheet requires two or more souvenir sheets. But because a display may only contain 3 souvenir sheets, **A** is the correct answer.

7. **D.** In order for a Rawanda souvenir sheet to be in a valid display, a Ghana souvenir sheet must be in the same display. Choice **D** is the only one with a Ghana souvenir sheet in it.

8. **D.** Your task here is to find an explanation for the reported success of "assisted typing" based on the ideas in the passage. The last sentence says that children using assisted typing could communicate only those things that the assistant knew. This should make you realize that the assistant is really the person controlling the typing and the communication. Unfortunately, the children are not communicating at all, and assisted typing is bogus. The only choice that conveys this explanation is **D**: the assistant actually controls the typing.

9. **C.** This choice eliminates other important factors that might be reasons for an increase in shelter occupancy on Christmas Eve. Unlike other holidays such as Easter and Memorial Day, Christmas arrives at a time of the year when the weather may be harsh—rain, snow, low temperatures, and so on. By discounting the weather and the desire for hot meals in cold weather, you can more easily conclude that homeless people are more likely to seek companionship on the Christmas holiday than the other holidays.

Team-LRN

From the initial conditions, you could have drawn the following:

4 A's AAAA
3 B's
2 C's CC

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

10. B. For this question, you have

					A		B	
1	2	3	4	5	6	7	8	9

Because the 4 batters from A must be next to each other, you have

	A	A	A	A			B	
1	2	3	4	5	6	7	8	9

or

	A	A	A	A	B			
1	2	3	4	5	6	7	8	9

In both cases, because the batters from C are in consecutive spots, spot number 2 must have a batter from C.

11. C. If a batter from C is in spot number 5, then the 4 batters from A must occupy either spot numbers 1–4 or spot numbers 6–9.

				C	A	A	A	A
A	A	A	A	C				
1	2	3	4	5	6	7	8	9

Because the other batter from C must be next to the one in spot number 5, he will occupy either spot number 4 or 6, whichever one is not occupied by a batter from A.

			C	C	A	A	A	A
A	A	A	A	C	C			
1	2	3	4	5	6	7	8	9

Thus, the only spot numbers open for batters from B are either 1–3 or 7–9. Thus, the batters from B must be next to each other.

12. C. If the players in spot numbers 3 and 9 are from the same team, then they must be from Baltimore because the batters from the other two teams must bat consecutively.

		B						B
1	2	3	4	5	6	7	8	9

Batters from Atlanta must be together, so they will be in spot numbers 4–7 or 5–8. Thus, the player batting in spot number 7 must be from Atlanta.

13. B. For this question, if a batter from B is in spot number 2 and a batter from C is in spot number 3, then the other batter from C must be in spot number 4. Because the four A players are together, spot number 1 must contain a B player:

	B	C	C					
1	2	3	4	5	6	7	8	9

Now if the 4 batters from A occupy spot numbers 6–9, the last batter from B could be in spot number 5.

14. **E.** Remember that you are looking for the choice the passage does NOT support. The best way to make the decision is to go through the choices like a true/false test, eliminating those choices that the passage would support. The only choice that isn't in line with the passage is **E**: a novice's performance improves when experts observe. The passage states that novices do worse when they are being observed. So if experts are observing them, novices will perform worse. This reasoning makes choice **E** the right answer because it contradicts the statement in the passage.

15. **E.** From the initial information, you have
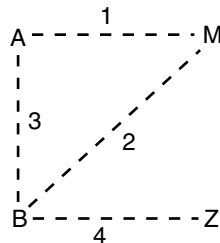
There is no way to use each of the bus lines exactly once and hit each of the stops only once. (You arrive at B twice.)

16. **A.** Because three buses stop at the botanical garden, the family has to stop at the botanical garden exactly twice. However, because all the other stops have no more than two buses, the family does not have to make exactly two stops anywhere else.

17. **A.** If the first two buses are 1 and 3, then the person must have started at the museum and gone to the amusement center and then the botanical garden. The third bus is bus 2, which takes the person back to the museum. However, bus 4 does not stop at the museum. So this sequence is not possible, and therefore is the correct answer.

18. **B.** At least two buses: from Z to B to A requires bus 4 and bus 3.

19. **C.** For this question, you must find which statement is a logical conclusion to Quick Nick's research. The best idea is to read each choice and eliminate it if it isn't supported by the data in the passage. The only answer that holds up is **C:** that at any given moment an American is more likely to be eating than talking on the phone. Because Americans spend more of their life eating than talking on the phone, at any given moment the likelihood of eating is greater than that of talking on the phone.

20. **B.** Obviously, the replacement of CFC-based refrigerants in all automobiles would cost millions if not billions of dollars. But perhaps more important, what might be the adverse effects of CFC-based refrigerants on the ecology? For this conclusion to be valid, the benefits of protecting the earth's ozone layer and reducing the number of skin cancer cases must outweigh both the financial costs involved as well as any potential other environmental costs of replacing the old refrigerants in all automobiles.

From the information, you could have made the following notes for 21-24:

$1 \rightarrow 4$ 7/8   7   8

35 or 75   David_ _ _ _   Sarah _ _ _ _

21. **A.** We need to determine four numbers which can be picked. Since the question states that 3 is not picked, then 5 is also not picked. From above we know one of either 7 or 8 is not picked. That eliminates three of the eight numbers. If the number 1 is not picked, then the number 4 will also not be picked, eliminating a total of five from the eight numbers. This won't allow four numbers to be picked. So, the number 1 must be picked.

22. **B.** Because you know that David does not pick both 7 and 8 and Sarah does, one of the numbers is 7 or 8 (whichever David did not pick). The other number is one which David picked but Sarah did not. Choice **A** is wrong because it has 7 and 8. Choice **B** is the only answer that has 7 or 8, and one of them is necessary.

23. **E.** The easiest method here is to eliminate answers. Choices **A** and **B** can be eliminated because they have both 7 and 8. Choice **C** has a 3 so it must have a 5. Choice **E** needs a 7 and 8. Choice **E** is correct.

24. **E.** Sarah picks both 7 and 8, according to one of the initial conditions. The question also specifies that 5 is picked, which means that 3 must also be picked. Thus, the four numbers not picked are 1, 2, 4, 6.

25. **A.** Your task is to find a statement that supports the idea that people have widely differing reactions to tattoos. To do this, read through each answer choice and eliminate those that don't support this idea. Although it takes a bit of thinking, choice A is the right answer. This choice supports both of the main ideas in the passage. Either you love tattoos or hate them. Those that hate them chalk their one tattoo experience up as a mistake and don't get any more. Those who love tattoos get more, and aren't likely to stop at just two. These are the people who may become addicted to body art.

26. **B.** From the initial facts, you can make the following notes:

1	2	3	4	5	6	7	8	9	10	11	12
atrium	r								v	v	

    NR (or RN) Q . . .(n) . . .P = M . . .(n) . . .S (equidistant pairs)

    In **C** and **D**, Norton and Rudman aren't on adjacent floors.

    In choice **A** and **E**, the pairs Quantech/Polycorp and Syscom/Manheim are separated by different distances. Thus **B** is the only possible answer.

27. **D.** For this problem, you may add to these notes as follows:

1	2	3	4	5	6	7	8	9	10	11	12
atrium	P	R		M					v	v	

    NR (or RN)   Q . . . (n) . . . P = M . . . (n) . . . S (equidistant pairs)

    Because Norton and Rudman must be adjacent, Norton must be on the fifth floor:

1	2	3	4	5	6	7	8	9	10	11	12
atrium	P	R	N	M					v	v	

    NR (or RN)   Q . . . (n) . . . P = M . . . (n) . . . S (equidistant pairs)

    This makes I incorrect, ruling out answers **C** and **E**.

Finally, because Quantech must be the same distance form Polycorp that Syscom is from Manheim, Quantech and Syscom must occupy the ninth and twelfth floors, respectively:

1	2	3	4	5	6	7	8	9	10	11	12
atrium	P	R	N	M				Q	v	v	S

Thus, I and II are both true, so the correct answer is **D**.

28. E. For this problem, we may add to these notes as follows:

1	2	3	4	5	6	7	8	9	10	11	12
atrium	r					O	P	M	v	v	

NR (or RN)   Q . . . (n) . . . P = M . . . (n) . . . S (equidistant pairs)

Now because Quantech must be the same distance from Polycorp that Syscom is from Manheim, Quantech must be directly above or below Syscom:

N—R (or R—N)

Q—S (or S—Q)

Thus Quantech, Syscom, Norton, and Rudman must occupy the third through sixth floor, leaving the twelfth floor vacant.

29. E. For this particular question, you may fill in three of the floors:

1	2	3	4	5	6	7	8	9	10	11	12
atrium	O					Q			v	v	P

NR (or RN)   Q . . . (n) . . . P = M . . . (n) . . . S (equidistant pairs)

Because there must be as many floors between Manheim and Syscom as there are between Polycorp and Quantech, Manheim and Syscom must be placed on floors 4 and 9:

1	2	3	4	5	6	7	8	9	10	11	12
atrium	O		M/S			Q		S/M	v	v	P

NR (or RN)

This forces N and R to be on the fifth and sixth floors, leaving the eighth floor vacant.

30. D. This question asks you to select the answer choice that would weaken the claim that Maine summer camps will generate more enthusiasm for water sports by adopting a water safety program. The best strategy is to read through the choices and eliminate those that are irrelevant or that strengthen (rather than weaken) the argument. If you do this, you are left with choice **D**: Children who attend summer camp in California have more exposure to water sports from an early age. Thus, it's logical that these children may have developed a greater affinity for water sports before they ever arrived at summer camp. Thus, it could be the early exposure, not the water safety program, that increases the children's liking for water sports.

From the initial conditions, you can draw the following chart for questions 31–35:

9 a.m.	10 a.m.	11 a.m.	12 N	1 p.m.	2 p.m.	3 p.m.	CB

Ɗ   Ɗ

E?   E?

←———————A   F ———————→
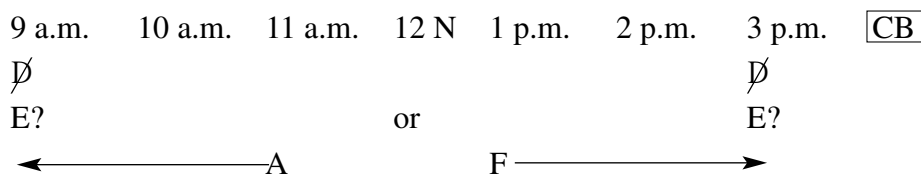
31. B. Eliminating incorrect choices is the method. Choice **A** and **C** are wrong because Cindy must be immediately before Beth. Choice **D** has Donna at 9 a.m. Choice **E** has Amy after 12 noon. The correct answer is **B**.

32. C. From the facts, you can fill in the chart as follows:

9 a.m.	10 a.m.	11 a.m.	12 N	1 p.m.	2 p.m.	3 p.m.	CB
C	B	A		F?	F?	E	

If Cindy is scheduled for 9 a.m., then Beth must be scheduled for 10 a.m. Since Amy must be scheduled before noon, Amy must be scheduled for 11 a.m. Since Cindy is scheduled for 9 a.m., Eva must be scheduled for 3 p.m. Finally, Filly must be scheduled for 1 p.m. or later, so she cannot be scheduled for noon. Thus, the only choice left is Donna, and there are no rules preventing her from being scheduled for noon.

33. B. From the facts, you can fill in the chart as follows:

9 a.m.	10 a.m.	11 a.m.	12 N	1 p.m.	2 p.m.	3 p.m.	CB
~~D~~		A		F		~~D~~	
E?			or			E?	

For this question, you know that exactly one dancer is scheduled between Amy and Filly. This schedule means that Amy must be scheduled for 11 a.m. and Filly must be scheduled for 1 p.m., and the time-slot of interest is the noon slot. Eva cannot be scheduled for noon because she must be scheduled for either 9 a.m. or 3 p.m. Neither Cindy nor Beth could be scheduled for the noon slot because Cindy must be scheduled immediately before Beth. Thus, the dancers who could be scheduled for that time are Donna and Gina.

34. D. From the facts, you can fill in the chart as follows:

9 a.m.	10 a.m.	11 a.m.	12 N	1 p.m.	2 p.m.	3 p.m.	CB
G	D	A	C	B	F	E	

For this question, you have GDA. Because Amy must be scheduled before noon, Gina, Donna, and Amy must be scheduled for 9 a.m., 10 a.m., and 11 a.m., respectively. Eva must be scheduled for 3 p.m., because the 9 a.m. spot is taken. Three consecutive spots are now left for Filly, Cindy, and Beth. You know that Cindy must be scheduled immediately before Beth, which means that Filly cannot be scheduled in the middle. Because Filly must be scheduled for 1 p.m. or after, she must be scheduled for 2 p.m. Thus, Cindy is scheduled for 12 noon and Beth for 1 p.m.

35. E. From the facts, you can fill in the chart as follows::

9 a.m.	10 a.m.	11 a.m.	12 N	1 p.m.	2 p.m.	3 p.m.	CB
~~D~~					F	~~D~~	
E?			or			E?	
		←———————— A					

Filly is scheduled for 2 p.m. Then Cindy can't be scheduled for 1 p.m. because she must be scheduled immediately before Beth.

FINAL PREPARATION:
THE FINAL TOUCHES

Before the Exam

1. Spend the last week of preparation primarily on reviewing already completed problems, some basic skills, strategies, techniques, and directions for each area.

2. Carefully review the sections on taking the GRE CBT and the general strategies.

3. Do a quick review of each of the question types and the specific strategies.

4. Don't cram the night before the exam. It's a waste of time.

5. Make sure that you are familiar with the testing center location and nearby parking facilities.

At the Exam

6. Arrive at the exam location and check in at least 30 minutes before your scheduled testing time.

7. Remember to bring a valid photo-bearing ID, your score-recipient information, your authorization voucher (if you requested one from ETS), and a few pencils to the exam.

8. Guess if a problem is too difficult or takes too much time. If possible, try to eliminate one or more of the answer choices before guessing.

9. Take advantage of having the scratch paper. Do calculations, redraw diagrams, note eliminated choices, or simply make helpful notes.

10. Make sure that you are answering "what is being asked" and that your answer is reasonable.

Notes

Notes

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LITERATURE NOTES

Absalom, Absalom!
The Aeneid
Agamemnon
Alice in Wonderland
All the King's Men
All the Pretty Horses
All Quiet on Western Front
All's Well & Merry Wives
American Poets of the 20th Century
American Tragedy
Animal Farm
Anna Karenina
Anthem
Antony and Cleopatra
Aristotle's Ethics
As I Lay Dying
The Assistant
As You Like It
Atlas Shrugged
Autobiography of Ben Franklin
Autobiography of Malcolm X
The Awakening
Babbit
Bartleby & Benito Cereno
The Bean Trees
The Bear
The Bell Jar
Beloved
Beowulf
The Bible
Billy Budd & Typee
Black Boy
Black Like Me
Bleak House
Bless Me, Ultima
The Bluest Eye & Sula
Brave New World
Brothers Karamazov
Call of Wild & White Fang
Candide
The Canterbury Tales
Catch-22
Catcher in the Rye
The Chosen
The Color Purple
Comedy of Errors…
Connecticut Yankee
The Contender
The Count of Monte Cristo
Crime and Punishment
The Crucible
Cry, the Beloved Country
Cyrano de Bergerac
Daisy Miller & Turn…Screw
David Copperfield
Death of a Salesman
The Deerslayer
Diary of Anne Frank
Divine Comedy-I. Inferno
Divine Comedy-II. Purgatorio
Divine Comedy-III. Paradiso
Doctor Faustus

Dr. Jekyll and Mr. Hyde
Don Juan
Don Quixote
Dracula
Electra & Medea
Emerson's Essays
Emily Dickinson Poems
Emma
Ethan Frome
The Faerie Queene
Fahrenheit 451
Far from Madding Crowd
A Farewell to Arms
Farewell to Manzanar
Fathers and Sons
Faulkner's Short Stories
Faust Pt. I & Pt. II
The Federalist
Flowers for Algernon
For Whom the Bell Tolls
The Fountainhead
Frankenstein
The French Lieutenant's Woman
The Giver
Glass Menagerie & Streetcar
Go Down, Moses
The Good Earth
Grapes of Wrath
Great Expectations
The Great Gatsby
Greek Classics
Gulliver's Travels
Hamlet
The Handmaid's Tale
Hard Times
Heart of Darkness & Secret Sharer
Hemingway's Short Stories
Henry IV Part 1
Henry IV Part 2
Henry V
House Made of Dawn
The House of the Seven Gables
Huckleberry Finn
I Know Why the Caged Bird Sings
Ibsen's Plays I
Ibsen's Plays II
The Idiot
Idylls of the King
The Iliad
Incidents in the Life of a Slave Girl
Inherit the Wind
Invisible Man
Ivanhoe
Jane Eyre
Joseph Andrews
The Joy Luck Club
Jude the Obscure
Julius Caesar
The Jungle
Kafka's Short Stories
Keats & Shelley
The Killer Angels
King Lear
The Kitchen God's Wife
The Last of the Mohicans

Le Morte Darthur
Leaves of Grass
Les Miserables
A Lesson Before Dying
Light in August
The Light in the Forest
Lord Jim
Lord of the Flies
Lord of the Rings
Lost Horizon
Lysistrata & Other Comedies
Macbeth
Madame Bovary
Main Street
The Mayor of Casterbridge
Measure for Measure
The Merchant of Venice
Middlemarch
A Midsummer-Night's Dream
The Mill on the Floss
Moby-Dick
Moll Flanders
Mrs. Dalloway
Much Ado About Nothing
My Ántonia
Mythology
Narr. …Frederick Douglass
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Night
1984
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The Odyssey
Oedipus Trilogy
Of Human Bondage
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Old Testament
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The Once and Future King
One Day in the Life of Ivan Denisovich
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Othello
Our Town
The Outsiders
The Ox-Bow Incident
Paradise Lost
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The Pearl
The Pickwick Papers
The Picture of Dorian Gray
Pilgrim's Progress
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Plato's Euthyphro…
Plato's The Republic
Poe's Short Stories
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A Raisin in the Sun

The Red Badge of Courage
The Red Pony
The Return of the Native
Richard II
Richard III
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Roman Classics
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Shakespeare's Histories
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Shakespeare's Tragedies
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