

**Form Codes AEIA, BWIA**



# The SAT<sup>®</sup>

## **Question-and-Answer Service**

### **January 2012 Administration**

#### **INSIDE:**

- Test questions and correct answers
- The difficulty level for each question
- Your essay prompt and all other essay prompts administered on your test day
- Instructions for scoring your test
- Suggestions for using this report

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**SAT<sup>®</sup>**

# Using Your Question-and-Answer Service (QAS) Report

This booklet contains the SAT<sup>®</sup> you took in January 2012, starting with all the essay prompts given in January, including the one you answered. It also includes scoring information. If the SAT you took included an unscored “equating” section, this booklet will not include that section.

## Reviewing Your SAT Results

To make the best use of your personalized QAS report, we suggest that you:

- Read each question in the booklet, then check the report for the type of question, the correct answer, how you answered it and the difficulty level.
- Analyze test questions you answered incorrectly to understand why your answer was incorrect. Check to see whether you might have misread the question or mismarked the answer.
- Keep track of how you did on the different types of questions (as labeled on your QAS report), either by using the table below or by printing your online score report at [sat.collegeboard.org/scores](http://sat.collegeboard.org/scores). This can help you understand your academic strengths and identify areas for improvement.

| Section                 | Type of Question                            | Number Correct | Number Incorrect | Number Omitted |
|-------------------------|---|----------------|------------------|----------------|
| Critical Reading        | C Sentence completion                       |                |                  |                |
|                         | R Passage-based reading                     |                |                  |                |
| Mathematics             | N Number and operations                     |                |                  |                |
|                         | A Algebra and functions                     |                |                  |                |
|                         | G Geometry and measurement                  |                |                  |                |
|                         | D Data analysis, statistics and probability |                |                  |                |
| Writing Multiple-Choice | S Improving sentences                       |                |                  |                |
|                         | E Identifying sentence errors               |                |                  |                |
|                         | P Improving paragraphs                      |                |                  |                |

## Reviewing Your Essay

View a copy of your essay online at [www.collegeboard.org/viewessay](http://www.collegeboard.org/viewessay). On the practice sheets in the back of this booklet, you can try writing your essay again or practice writing an essay for one of the other prompts in this booklet.

## Scoring Your Test

Use the Scoring Worksheet, SAT Essay Scoring Guide and score conversion tables at the back of this booklet to verify the score on your test. Use the Form Code shown at the top of your personalized QAS report to locate your particular score conversion tables. The Scoring Worksheet and score conversion tables are specific to the test you took. Do not try to score any other tests using them.

## Practicing to Take the SAT Again

If you decide to take the SAT again, your QAS results will help you identify the specific areas and types of questions to focus on for additional practice. Free practice resources are available on [sat.collegeboard.org/practice](http://sat.collegeboard.org/practice) including a practice test, additional practice questions, and a helpful tool called SAT Skills Insight™. SAT Skills Insight will show you the types of skills tested on the SAT and suggestions to help you improve your skills for next time.

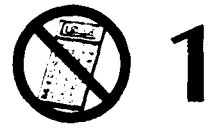
Now that you're familiar with the test, you're more prepared for the kinds of questions on the SAT. You're likely to be more comfortable with the test-taking process, including the time limits. On average, students who take the SAT a second time increase their combined critical reading, mathematics and writing scores by about 40 points.



# ESSAY

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# ESSAY



## ESSAY

Time — 25 minutes

The essay gives you an opportunity to show how effectively you can develop and express ideas. You should, therefore, take care to develop your point of view, present your ideas logically and clearly, and use language precisely.

Your essay must be written on the lines provided on your answer sheet—you will receive no other paper on which to write. You will have enough space if you write on every line, avoid wide margins, and keep your handwriting to a reasonable size. Remember that people who are not familiar with your handwriting will read what you write. Try to write or print so that what you are writing is legible to those readers.

### Important Reminders:

- A pencil is required for the essay. An essay written in ink will receive a score of zero.
- Do not write your essay in your test book. You will receive credit only for what you write on your answer sheet.
- An off-topic essay will receive a score of zero.
- If your essay does not reflect your original and individual work, your test scores may be canceled.

You have twenty-five minutes to write an essay on the topic assigned below.

Think carefully about the issue presented in the following excerpt and the assignment below.

Most people tend to trust others too readily. To avoid being taken advantage of, however, it is generally wise to be doubtful and suspicious of others' motives or honesty. Many people would agree that if you find yourself doubting other people's sincerity or questioning their intentions, your instincts are probably correct. You are less likely to regret being cautious than being too trusting.

**Assignment:** Is it wise to be suspicious of the motives or honesty of other people, even those who appear to be trustworthy? Plan and write an essay in which you develop your point of view on this issue. Support your position with reasoning and examples taken from your reading, studies, experience, or observations.

BEGIN WRITING YOUR ESSAY ON PAGE 2 OF THE ANSWER SHEET.

If you finish before time is called, you may check your work on this section only.  
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You have twenty-five minutes to write an essay on the topic assigned below.

Think carefully about the issue presented in the following excerpt and the assignment below.

People who complain about progress and change expose themselves to criticism. Yet there is always a subtle danger in life's improvements and refinements, a drawback or disadvantage that occurs along with the benefits of progress. It sometimes seems that we devote half of our time to making what we call "improvements"—in our lives, our work, our relationships—but so often the original conditions had some quality that is lost in the process of change.

Adapted from E. B. White, "Progress and Change"

**Assignment:** Does improvement or progress usually involve a significant drawback or problem of some kind? Plan and write an essay in which you develop your point of view on this issue. Support your position with reasoning and examples taken from your reading, studies, experience, or observations.

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You have twenty-five minutes to write an essay on the topic assigned below.

Think carefully about the issue presented in the following excerpt and the assignment below.

Learning and doing are their own rewards. No external rewards are required. Yet when external rewards are introduced—whether attention and praise from parents or prizes from teachers—these rewards exert a substantial influence. Instead of reading books to find out about the world, kids will read to win prizes. Kids will produce for rewards, but the quality of their activity and their interest in it will be dramatically altered.

Adapted from Barry Schwartz, *The Costs of Living*

**Assignment:** Is it wrong or harmful to motivate people to learn or achieve something by offering them rewards? Plan and write an essay in which you develop your point of view on this issue. Support your position with reasoning and examples taken from your reading, studies, experience, or observations.

**BEGIN WRITING YOUR ESSAY ON PAGE 2 OF THE ANSWER SHEET.**

**If you finish before time is called, you may check your work on this section only.  
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You have twenty-five minutes to write an essay on the topic assigned below.

Think carefully about the issue presented in the following excerpt and the assignment below.

We almost always tend to treat people on the basis of what they have done: the star athlete is recognized and rewarded with a college scholarship, while the lawbreaker is prosecuted and punished. But our past deeds provide only a partial measure of our real worth as human beings. We should be treated according to what we are capable of accomplishing, regardless of what we may or may not have actually done.

**Assignment:** Should people be treated according to what they are capable of achieving instead of what they have actually done? Plan and write an essay in which you develop your point of view on this issue. Support your position with reasoning and examples taken from your reading, studies, experience, or observations.

BEGIN WRITING YOUR ESSAY ON PAGE 2 OF THE ANSWER SHEET.

If you finish before time is called, you may check your work on this section only.  
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**SECTION 2**

Time — 25 minutes

24 Questions

**Turn to Section 2 (page 4) of your answer sheet to answer the questions in this section.****Directions:** For each question in this section, select the best answer from among the choices given and fill in the corresponding circle on the answer sheet.

Each sentence below has one or two blanks, each blank representing that something has been omitted. Beneath each sentence are five words or sets of words labeled A through E. Choose the word or set of words that, when inserted in the sentence, best fits the meaning of the sentence as a whole.

**Example:**

Hoping to ----- the dispute, negotiators proposed a compromise that they felt would be ----- to both labor and management.

- (A) enforce . . useful  
(B) end . . divisive  
(C) overcome . . unattractive  
(D) extend . . satisfactory  
(E) resolve . . acceptable

(A) (B) (C) (D) ●

- Jacob felt great ----- about his upcoming trip to Brazil; indeed, he could hardly contain his enthusiasm.  
(A) concern (B) uncertainty (C) confusion  
(D) generosity (E) excitement
- The professor's classroom manner was quite -----, never revealing the warmth and playfulness she showed in private.  
(A) witty (B) sincere (C) lively  
(D) formal (E) friendly
- Instead of taking notes during the interview, the journalist recorded the celebrity's remarks on tape and later ----- them.  
(A) disavowed (B) transcribed (C) anticipated  
(D) retracted (E) recollected
- Like several other important advances in medicine, penicillin was a somewhat ----- discovery resulting from ----- combination of blind chance and technical expertise.  
(A) progressive . . a reliable  
(B) wonderful . . an unlucky  
(C) untimely . . a profitable  
(D) ordinary . . an unfortunate  
(E) accidental . . a favorable
- Author Luis Zalamea calls novel writing a ----- experience, one that cleanses him of feelings of rebellion and frustration.  
(A) subliminal (B) perpetual (C) stupefying  
(D) cathartic (E) corrosive
- The scientist was ----- in her evaluation of her own research, choosing to analyze and report on seemingly ----- results as well as those that were more expected.  
(A) meticulous . . aberrant  
(B) resolute . . embryonic  
(C) deferential . . convoluted  
(D) objective . . quotidian  
(E) myopic . . unequivocal
- Writer John Worthen suggested that, in some cases, biographers should be -----, considering all available details rather than making ----- a first principle.  
(A) forthright . . relevance  
(B) cynical . . incrimination  
(C) inclusive . . selection  
(D) libelous . . discrimination  
(E) comprehensive . . drudgery
- Grover Pease Osborne's 1893 economics treatise was remarkably ----- since it foresaw that technological advances would increase the availability of natural resources.  
(A) naïve (B) tenacious (C) prescient  
(D) influential (E) intelligible



The passages below are followed by questions based on their content; questions following a pair of related passages may also be based on the relationship between the paired passages. Answer the questions on the basis of what is stated or implied in the passages and in any introductory material that may be provided.

Questions 9-10 are based on the following passage.

Line The package that arrived yesterday contained foliage  
5 from the most famous tamarind tree in India, the tree that  
brought on the rains just by singing about them, and whose  
golden voice caused the Emperor Akbar to proclaim him  
one of the nine gems of his court. Even today, Tansen's  
10 reputation is such that singers travel to his tomb to pluck  
foliage from the branches to make into throat concoctions,  
hoping their voices will become as pure as that of their  
illustrious predecessor, he who had caused the palace  
lamps to light up just by singing the *Deepak Raag* four  
centuries ago.

9. The narrator refers to the "rains" (line 4) and the "palace lamps" (lines 10-11) primarily to
- (A) explain the purpose of a practice
  - (B) illustrate the depths of a passion
  - (C) dramatize the magnitude of a talent
  - (D) emphasize the soundness of a belief
  - (E) show the consequences of a decision
10. The passage implies that the "singers" (line 7) view Tansen with
- (A) consternation
  - (B) ambivalence
  - (C) wariness
  - (D) pride
  - (E) awe

Questions 11-12 are based on the following passage.

Line Archaeologists have traditionally thought that the rise of  
5 agriculture required early farmers to settle down near their  
crops. But new findings suggest that Çatalhöyük, Turkey—  
a large Neolithic village of such early farmers—was  
Arlene Rosen's analysis of fossil remains of wheat and  
barley found at Çatalhöyük indicates that the grain was  
10 grown in a dry area. Some experts reject the implication  
that Çatalhöyük's farmers cultivated distant fields, since  
large quantities of grain would have had to be transported.  
However, archaeobotanist Eleni Asouti has shown that the  
wood used for construction at Çatalhöyük grew at least  
twelve kilometers away from the village.

11. Which of the following, if true, would most challenge the "implication" (line 8) ?
- (A) Çatalhöyük's farmers obtained through trade the wheat and barley that Rosen analyzed.
  - (B) Çatalhöyük's farmers understood the impact of soil conditions on crop productivity.
  - (C) Çatalhöyük's farmers alternated on an annual basis the crops they planted.
  - (D) Çatalhöyük's farmers shared wheat and barley fields with neighboring villages.
  - (E) Çatalhöyük's farmers used wood that deteriorated in the damp environment.
12. The author mentions Asouti's research most likely because it
- (A) undermines the claim that the villagers somehow transported materials across distances
  - (B) reinforces archaeologists' traditional view of the rise of agriculture
  - (C) provides support for the view that Çatalhöyük's farmers could have cultivated distant fields
  - (D) offers a unique perspective on Neolithic farming practices
  - (E) qualifies Rosen's theories about the Çatalhöyük farmers





Questions 13-24 are based on the following passages.

Passage 1 is adapted from a 2000<sup>1</sup> book written by a historian; Passage 2 is adapted from a 1990 autobiography of a well-known African American photographer.

### Passage 1

In the mid-1930s, photographer Margaret Bourke-White wrote an essay in which she explained (perhaps to herself as much as to the reading public) the significance of a photographer's "point of view." She claimed that this aspect was paramount, transcending all the necessary, technical elements in the image-making process. The principal questions Bourke-White posed in the essay reveal a personal test of sorts in judging a photographer's point of view—"How alive is he? Does he know what is happening in the world? How sensitive has he become during the course of his own photographic development to the world-shaking changes in the social scene about him?" Here the ideal photographer proves his or her worthiness in the profession by having developed a social consciousness along the way; the extent to which he or she may be taken seriously as a professional rides on a level of sensitivity to social issues.

If Bourke-White came to documentary photography through a desire to bring her work closer to the "realities of life," as she wrote in 1936, she probably recognized the advantages that words could offer her images. At the same time that Bourke-White's pictures of people needed supportive text, Southern novelist Erskine Caldwell's words about people needed pictures. In 1936 Caldwell found himself in search of "the best photographer available." He intended to make a comprehensive survey of the American South in an attempt to prove that the social problems portrayed in his best-selling fiction posed genuine challenges. Critics and censors had railed against Caldwell's stories for misrepresenting the South during that era by dwelling on the effects of illiteracy, racism, and poverty. Caldwell hoped to change their minds with a new piece of nonfiction that would be filled with telling photographs. His show of faith in the camera as a recorder of truth and photography as an objective medium placed Caldwell squarely within a mainstream intellectual mentality that wholeheartedly embraced photographs, giving the images credibility as powerful articles of truth.

Early in 1936 the novelist contacted Bourke-White. She accepted his offer with enthusiasm. On the trek that the novelist and the photographer took through seven Southern states, Bourke-White would get many opportunities to prove her sensitivity to the "world-shaking changes in the social scene."

### Passage 2

When I arrived in Washington, D.C., in January 1942, I was surprised to find that life there embodied some of the

bigotry then prevalent in other parts of the United States. Roy Stryker,<sup>1</sup> who hired me, met my dismay with advice.

"You brought a camera to town with you," Stryker told me. "If you use it intelligently, you might help turn things around. It's a powerful instrument in the right hands." Speaking of bigots, he said, "It's not enough to photograph one of them and label his photograph *bigot*. Bigots have a way of looking like everyone else. You have to get at the source of their bigotry. And that's not easy. That's what you'll have to work at, and that's why I took you on. Read. Read a lot. . . . Go through these picture files. They have a lot to say about what's happening here and other places throughout this country. They are an education in themselves."

When our department was disbanded a year later, what I had learned in that time outdistanced the bigotry to which I had been subjected, and the experience had proved to be crucial to my training as a documentary journalist—far more important than those technical aspects involving the use of a camera. I had been forced to take a hard look backward at Black history; to realize the burdens of those who had lived through it. Now, I was much better prepared to face up to the history yet to be made, the events to come. Another significant realization had taken hold—a good documentary photographer's work has as much to do with his heart as it does with his eye. I had learned that the camera can lie; that not only was it capable of being untruthful, but also that it could be Machiavellian.<sup>2</sup> It all depended how its users chose to see things. With deliberate intent, the most righteous human being could be made to look evil. What individuals actually stand for, good or bad, now urges me to try to catch the truth of them. I learned to use the camera as a means of persuasion as long as that persuasiveness is conducted with a sense of fair play. Yet, I remained aware of the possibility that what may appear as truth to me may not be acceptable as truth to others. That's the way things are.

<sup>1</sup> a government official and photographer best known for heading the documentary photography project of the Farm Security Administration during the Depression

<sup>2</sup> unscrupulous and cunning

13. Both Bourke-White (Passage 1) and the author of Passage 2 believe that the technical skills needed for documentary photography

- (A) do not receive the attention they deserve
- (B) cannot be acquired quickly or easily
- (C) can pose a financial hardship to the photographer
- (D) are less important than the photographer's insights into the subject matter
- (E) should be standardized so that professional photographers learn the same basic skills



14. Which question would the author of Passage 2 most likely feel needs to be added to the list of questions in lines 9-12, Passage 1 (“How . . . him”) ?
- (A) Can he accept the criticism of more experienced observers?  
 (B) Does he avoid distorting his subjects?  
 (C) Does he realize the time required to hone his skills?  
 (D) Is he aware of problems in the world around him?  
 (E) Is he tolerant of human weaknesses?
15. In line 11, “course” most nearly means
- (A) progression  
 (B) direction  
 (C) serving  
 (D) class  
 (E) race
16. In line 16, “rides” most nearly means
- (A) depends  
 (B) travels  
 (C) continues  
 (D) sails  
 (E) conveys
17. Caldwell (Passage 1) and Stryker (Passage 2) share which assumption about documentary photographs?
- (A) They are likely to be popular, even among those they criticize.  
 (B) They can promote harmony among different groups of people.  
 (C) They can persuade skeptical viewers that social injustices do exist.  
 (D) They are useful in convincing leaders to take action.  
 (E) They should present human experience as dignified and inspiring.
18. In line 49, Stryker comments on the “camera” primarily to
- (A) sympathize with the author about the difficulties of his new job  
 (B) compliment the author’s diligence  
 (C) encourage the author’s interest in politics  
 (D) offer a solution to the author’s dissatisfaction  
 (E) warn the author about being too idealistic
19. In lines 55-56 (“That’s . . . on”), Stryker’s point is that the author was hired to
- (A) capture subtle evidence of an attitude  
 (B) depict a range of emotional reactions  
 (C) record national events of historic significance  
 (D) analyze relationships among individuals  
 (E) portray distinctive personalities favorably
20. Bourke-White would most likely interpret lines 66-69, Passage 2 (“I had . . . come”), as an
- (A) argument for the need to anticipate future crises  
 (B) example of a commonplace view of photography  
 (C) illustration of a fascination with world history  
 (D) expression of a concern about a profession  
 (E) indication of the essential qualifications of a photographer
21. The passages imply that Bourke-White, Caldwell, and Stryker share which assumption about people?
- (A) When people act collectively, they get better results.  
 (B) When people propose social reforms, they must anticipate opposition.  
 (C) People have always wanted to improve their living conditions.  
 (D) People who set out to change the world are overly optimistic.  
 (E) People should be aware of the problems of their society.
22. In line 69, the author uses the word “history” to refer to
- (A) major changes in political leadership  
 (B) social challenges that lay in the future  
 (C) written records accompanying photographs  
 (D) unexpected discoveries that shocked society  
 (E) surprising patterns in his personal life



23. Which aspect of Caldwell's project (Passage 1) best illustrates the "possibility" mentioned in lines 80-82, Passage 2 ("Yet . . . others")?

- (A) The earlier commercial success of Caldwell's fiction
- (B) The scope of Caldwell's intended survey
- (C) The earlier objections to Caldwell's stories
- (D) The use of photographs to support the written word
- (E) The expected public effect of Caldwell's finished book

**NOTE: Item #24 not included for scoring**

**STOP**

If you finish before time is called, you may check your work on this section only.  
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## SECTION 3

Time — 25 minutes

20 Questions

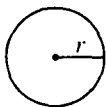
Turn to Section 3 (page 4) of your answer sheet to answer the questions in this section.

**Directions:** For this section, solve each problem and decide which is the best of the choices given. Fill in the corresponding circle on the answer sheet. You may use any available space for scratch work.

Notes

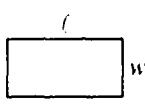
- The use of a calculator is permitted.
- All numbers used are real numbers.
- Figures that accompany problems in this test are intended to provide information useful in solving the problems. They are drawn as accurately as possible EXCEPT when it is stated in a specific problem that the figure is not drawn to scale. All figures lie in a plane unless otherwise indicated.
- Unless otherwise specified, the domain of any function  $f$  is assumed to be the set of all real numbers  $x$  for which  $f(x)$  is a real number.

Reference Information

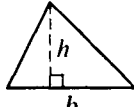


$$A = \pi r^2$$

$$C = 2\pi r$$



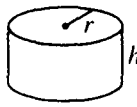
$$A = lw$$



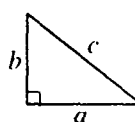
$$A = \frac{1}{2}bh$$



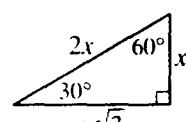
$$V = lwh$$



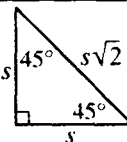
$$V = \pi r^2 h$$



$$c^2 = a^2 + b^2$$



Special Right Triangles

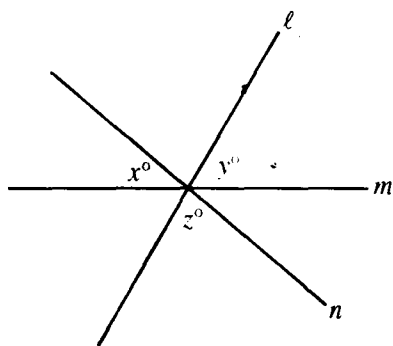


The number of degrees of arc in a circle is 360.

The sum of the measures in degrees of the angles of a triangle is 180.

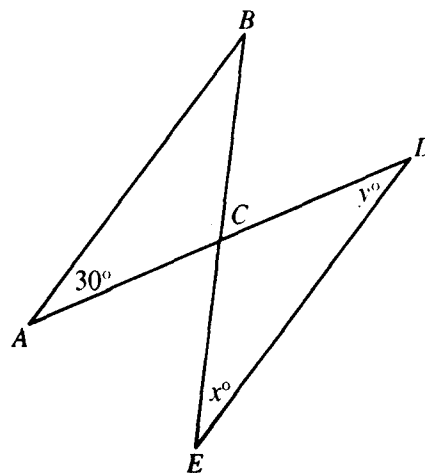
- The value of  $4.25 \times 10^k$  lies between 400 and 500. If  $k$  is an integer, what is the value of  $k$ ?
  - 1
  - 2
  - 3
  - 4
  - 5
- Which of the following is equivalent to  $(-x)(-x)(-x)$ ?
  - $-3x^3$
  - $-3x$
  - $-x^3$
  - $3x$
  - $x^3$

GO ON TO THE NEXT PAGE



3. In the figure above,  $x = 40$  and  $y = 60$ . What is the value of  $z$ ?

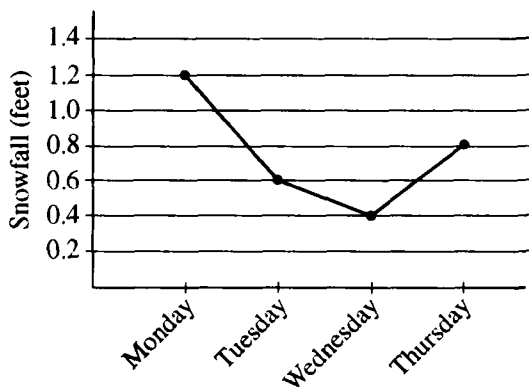
- (A) 100
- (B) 80
- (C) 60
- (D) 50
- (E) 40



5. In the figure above,  $\overline{AB} \parallel \overline{DE}$  and  $AC = BC$ . What is the value of  $x + y$ ?

- (A) 30
- (B) 45
- (C) 55
- (D) 60
- (E) 90

DAILY SNOWFALL AT SKI COUNTRY LODGE



4. The graph above shows the daily snowfall at Ski Country Lodge for four days. Based on the graph, what is the difference between the maximum and minimum daily snowfall, in feet, for the four days?

- (A) 0.2
- (B) 0.4
- (C) 0.6
- (D) 0.8
- (E) 1.0

6. If  $x$  and  $y$  are integers such that  $x^y = 1$  and  $xy = 1$ , what is the value of  $y^x$ ?

- (A) -1
- (B) 0
- (C) 1
- (D) 1.5
- (E) 2

GO ON TO THE NEXT PAGE

7. In an  $xy$ -coordinate system, points  $P$  and  $Q$  have coordinates  $(2, 1)$  and  $(4, 2)$ , respectively. Which of the following are coordinates of a point on the line through  $P$  and  $Q$ ?

(A)  $(6, 3)$   
 (B)  $(6, 4)$   
 (C)  $(6, 5)$   
 (D)  $(6, 6)$   
 (E)  $(6, 8)$

8. For all integers  $x$ ,  $y$ , and  $z$ , let  $(x, y, z)\blacktriangle$  be defined by  $(x, y, z)\blacktriangle = x^2 + y^2 + z^2$ . What is the value of  $\frac{(1, 2, 3)\blacktriangle}{(3, 2, 1)\blacktriangle}$ ?

(A)  $\frac{1}{9}$   
 (B)  $\frac{1}{3}$   
 (C) 1  
 (D) 3  
 (E) 9

9. Deer will come into the Jacksons' flower garden and eat the flowers only when either daisies or roses are growing in their garden. However, deer will not come into their garden and eat the flowers if their dog is in the yard next to the garden. Which of the following statements must be true?

(A) If the deer did not eat the Jacksons' flowers today, then roses are not growing in their garden.  
 (B) If the deer ate the Jacksons' flowers today, then their dog was not in the yard next to their garden.  
 (C) If the Jacksons' dog is not in the yard next to their garden today, then the deer will eat their flowers.  
 (D) If the Jacksons' dog is in the yard next to their garden today, then daisies are not growing in their garden.  
 (E) If daisies are growing in the Jacksons' garden today, then the deer will eat their flowers.

10. In a list of 100 numbers, the fraction of numbers greater than 15 is  $\frac{19}{25}$  and the fraction of numbers less than 15 is  $\frac{7}{50}$ . How many numbers in the list are equal to 15?

(A) 10  
 (B) 24  
 (C) 49  
 (D) 55  
 (E) 74

11. Solomon walks his neighbor's dog once every day and cuts his neighbor's lawn once each week. He earns \$3 each time he walks the dog and \$25 each time he cuts the lawn. Which of the following expressions represents the amount, in dollars, that he earns in  $w$  weeks?

(A)  $3w + 25$   
(B)  $25w + 3$   
(C)  $28w$   
(D)  $40w$   
(E)  $46w$

2, 3, 4, 5, 6, 6, 6, 7, 8, 9, 10

12. Which of the following is true about the average (arithmetic mean), median, and mode of the 11 numbers listed above?
- (A) The average, median, and mode are all different.  
(B) The average and median are the same, but the mode is different.  
(C) The average and mode are the same, but the median is different.  
(D) The median and mode are the same, but the average is different.  
(E) The average, median, and mode are all the same.

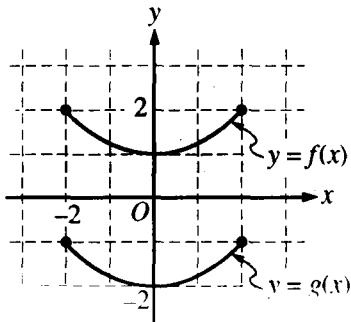
$$d(t) = 1.2t^2$$

13. The function  $d$ , defined above, models the distance in feet that a ball rolls down an inclined ramp in  $t$  seconds. According to this model, how many seconds would it take the ball to roll down 120 feet of the ramp?
- (A) 10  
(B) 13  
(C) 26  
(D) 100  
(E) 120

14. In the  $xy$ -coordinate plane,  $P$  and  $Q$  are different points that have the same  $y$ -coordinate and lie on the parabola whose equation is  $y = x^2 - 3x - 40$ . What is the  $x$ -coordinate of the midpoint of  $\overline{PQ}$ ?
- (A) 0  
(B)  $\frac{1}{2}$   
(C) 1  
(D)  $\frac{3}{2}$   
(E) 2

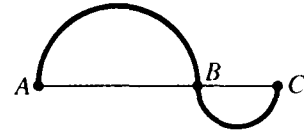
15. A triangle with a perimeter of 20 has a side of length 5. Which of the following is a possible length for a second side of the triangle?

(A) 5  
(B) 7  
(C) 10  
(D) 12  
(E) 14



16. The complete graphs of the functions  $f$  and  $g$  are shown in the  $xy$ -plane above. Which of the following could be equal to  $g(x)$ ?

(A)  $3 \cdot f(x)$   
(B)  $f(x - 3)$   
(C)  $f(x + 3)$   
(D)  $f(x) - 3$   
(E)  $f(x) + 3$



17. In the figure above, the two semicircles have radii of lengths  $j$  and  $k$ , respectively. Which of the following expressions gives the length of the darkened curved path shown from  $A$  to  $C$ ?

(A)  $jk\pi$   
(B)  $j^2k^2\pi$   
(C)  $(j + k)\pi$   
(D)  $\frac{j + k}{\pi}$   
(E)  $\frac{j\pi}{2} + \frac{k\pi}{2}$

$$p = ks, \text{ where } k \text{ is a constant.}$$

$$s = nt, \text{ where } n \text{ is a constant.}$$

18. Two relationships involving the variables  $p$ ,  $s$ , and  $t$  are given above. Which of the following must be true?

(A)  $p$  is directly proportional to  $t$ .  
(B)  $p$  is directly proportional to  $t^2$ .  
(C)  $p$  is equal to  $t$ .  
(D)  $p$  is directly proportional to  $\frac{1}{t}$ .  
(E)  $p$  is directly proportional to  $\frac{1}{t^2}$ .



$$12^{10}, 12^{10} + 12^{10}, 12^{10} + 12^{10} + 12^{10}, \dots$$

19. In the sequence above, the first term is  $12^{10}$  and each term after the first is  $12^{10}$  more than the preceding term. Which term in the sequence is equal to  $12^{12}$ ?

- (A) The 3rd term
- (B) The 12th term
- (C) The 24th term
- (D) The 120th term
- (E) The 144th term

20. A square with an area of 2 is inscribed in a circle. What is the area of the circle?

- (A)  $\pi$
- (B)  $\pi^2$
- (C)  $2\pi$
- (D)  $2\sqrt{2}\pi$
- (E)  $4\pi$

**STOP**

If you finish before time is called, you may check your work on this section only.  
Do not turn to any other section in the test.

**SECTION 4**

Time — 25 minutes

24 Questions

**Turn to Section 4 (page 5) of your answer sheet to answer the questions in this section.****Directions:** For each question in this section, select the best answer from among the choices given and fill in the corresponding circle on the answer sheet.

Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five words or sets of words labeled A through E. Choose the word or set of words that, when inserted in the sentence, best fits the meaning of the sentence as a whole.

**Example:**

Hoping to ----- the dispute, negotiators proposed a compromise that they felt would be ----- to both labor and management.

- (A) enforce . . useful  
 (B) end . . divisive  
 (C) overcome . . unattractive  
 (D) extend . . satisfactory  
 (E) resolve . . acceptable

(A) (B) (C) (D) ●

- Due to the ----- of architect Benjamin Banneker, the remarkable street plan for Washington, D.C., that had nearly been abandoned was ----- and carried out.
 

(A) artistry . . rejected  
 (B) persistence . . revived  
 (C) pessimism . . originated  
 (D) cautiousness . . postponed  
 (E) foresight . . ignored
- Because marine algae indirectly remove atmospheric carbon dioxide, a major ----- in marine algae populations might result in ----- levels of carbon dioxide.
 

(A) transformation . . perceptible  
 (B) reduction . . elevated  
 (C) explosion . . increased  
 (D) decline . . stabilized  
 (E) change . . uniform
- Keats's poetry was called ----- by those critics who noted that he indulged in sensuous imagery and luxuriant diction.
 

(A) voluptuous (B) imperious (C) sheepish  
 (D) harmonious (E) pedantic
- Even when offstage, the acting troupe exhibited the ----- behavior usually associated with histrionic temperaments.
 

(A) pessimistic (B) torpid (C) exaggerated  
 (D) judicious (E) ingenuous
- Danielle was easily the most ----- of her classmates, rarely willing to compromise or even listen to others' pleas.
 

(A) discreet (B) deferential (C) loquacious  
 (D) obdurate (E) rapacious



The passages below are followed by questions based on their content; questions following a pair of related passages may also be based on the relationship between the paired passages. Answer the questions on the basis of what is stated or implied in the passages and in any introductory material that may be provided.

Questions 6-9 are based on the following passages.

Passage 1

One of the strangest and most enthralling aspects of blogs (online journals) is just how intensely personal they can be. People like me maintain personal blogs because they like the idea that there's a place where a record of their existence is kept—a house with an always-open door where people who are looking for you can check on you, compare notes with you, and tell you what they think of you. Sometimes that house is messy, sometimes horrifyingly so. In real life, we wouldn't invite any passing stranger into these situations, but the remove of the Internet makes it seem OK.

Passage 2

Something about the personal blog makes me distinctly uncomfortable. After several hours of reading these blogs, I often feel sick, as if I've watched too many tell-all talk shows on daytime television. I've learned too much I didn't need to know about too many people's everyday lives—lives without anything particularly extraordinary to recommend them, except the bloggers' own sense of importance. Some blogs make me feel guilty, as if I have been looking at texts that are too personal and not intended for me to see. But I must confess that when I find a blog I like, I frequent the site daily, anxious for new entries.

6. The authors of both passages

- (A) criticize the development of a new technology
- (B) offer personal views of a contemporary practice
- (C) advocate participation in a creative enterprise
- (D) suggest unconventional modes of personal expression
- (E) mock common perceptions of a popular medium

7. Which generalization about personal blogs is supported by both passages?

- (A) Writers often find personal blogs tedious to produce.
- (B) The popularity of personal blogs is difficult to understand.
- (C) Many of the issues discussed in personal blogs can be uninteresting to readers.
- (D) Certain aspects of personal blogs are more acceptable on the Internet than they would be in real life.
- (E) Private details are often exposed on personal blogs.

8. The author of Passage 2 would most likely consider the "passing stranger" (lines 9-10, Passage 1) to be

- (A) an accurate characterization of a blog reader
- (B) an inviting distraction to a blog writer
- (C) an intrusion into the experience of reading a blog
- (D) an unrealistic representation of the dangers of blogs
- (E) a symbol of the fading popularity of blogs

9. Which statement best describes the relationship between the two passages?

- (A) The author of Passage 1 views personal blogs as unique and individual, whereas the author of Passage 2 is interested in their broader cultural significance.
- (B) The author of Passage 1 is a self-effacing blogger, whereas the author of Passage 2 believes that writing blogs is a self-aggrandizing pursuit.
- (C) The author of Passage 1 finds the intimacy of personal blogs compelling, whereas the author of Passage 2 is ambivalent about that intimacy.
- (D) The author of Passage 1 asserts that many blogs are well written, whereas the author of Passage 2 is embarrassed about the poor literary quality of many blogs.
- (E) The author of Passage 1 argues that most blogs consider overarching social issues, whereas the author of Passage 2 feels that too many blogs focus on mundane minutiae.



Questions 10-15 are based on the following passage.

*This passage is from a novel about an aspiring young writer living in London in 1950.*

Line One day in the middle of the twentieth century, I sat  
5 in an old graveyard which had not yet been demolished,  
in the Kensington area of London, when a young policeman  
stepped off the path and came over to me. He was shy and  
smiling, he might have been coming over the grass to ask  
me for a game of tennis. He only wanted to know what I  
was doing but plainly he didn't like to ask. I told him I  
was writing a poem, and offered him a sandwich which he  
refused as he had just had his dinner, himself. He stopped  
10 to talk awhile, then he said good-bye, the graves must be  
very old, and that he wished me good luck and that it was  
nice to speak to somebody.

This was the last day of a whole chunk of my life but I  
didn't know that at the time. I sat on the stone slab of some  
15 Victorian grave writing my poem as long as the sun lasted.  
I lived nearby in a bed-sitting-room with a gas fire and  
a gas ring operated by pennies and shillings in the slot,  
whichever you preferred or had. My morale was high. I  
needed a job, but that, which should have been a depressing  
20 factor when viewed in cold blood, in fact simply was  
not. Neither was the swinishness of my landlord, a  
Mr. Alexander, short of stature. I was reluctant to go home  
lest he should waylay me. I owed him no rent but he kept  
insisting that I should take a larger and more expensive  
25 room in his house, seeing that I had overcrowded the small  
single room with my books, my papers, my boxes and bags,  
my food-stores and the evidence of constant visitors who  
stayed to tea or came late.

So far I had stood up to the landlord's claim that I  
30 was virtually living a double-room life for single-room  
pay. At the same time I was fascinated by his swinishness.  
Tall Mrs. Alexander always kept in the background so far  
as the renting of rooms was concerned, determined not  
to be confused with a landlady.

35 Her hair was always glossy black, new from the  
hairdresser, her nails polished red. She stepped in and  
out of the house with a polite nod like another, but more  
superior. tenant. I fairly drank her in with my mind while  
smiling politely back. I had nothing whatsoever against  
40 these Alexanders except in the matter of their wanting me  
to take on a higher-priced room. If he had thrown me out  
I would still have had nothing much against them, I would  
mainly have been fascinated. In a sense I felt that the swine  
Alexander was quite excellent as such, surpassingly  
45 hand-picked. And although I wanted to avoid him on my  
return to my lodging I knew very well I had something to  
gain from a confrontation, should it happen.

10. The policeman in the first paragraph is represented primarily as

- (A) talkative
- (B) prying
- (C) confident
- (D) polite
- (E) overbearing

11. Lines 13-14 ("This was . . . time") are intended primarily to

- (A) foreshadow future developments
- (B) create a mood of melancholy
- (C) highlight the narrator's inexperience
- (D) exemplify the narrator's colloquial language
- (E) hint at the narrator's previous misfortunes

12. In context, the phrase "in cold blood" (line 20) is best understood to mean

- (A) maliciously
- (B) rationally
- (C) in a premeditated fashion
- (D) with paralyzing fear
- (E) with heartless detachment

13. The description of Mrs. Alexander in lines 32-38 ("Tall . . . tenant") suggests that the narrator views her as

- (A) brooding and distant
- (B) proud and aloof
- (C) arrogant and ill-tempered
- (D) judgmental and snide
- (E) boring and unintelligent



14. In context, the statement in line 38 (“I fairly . . . mind”) indicates that the narrator

- (A) feels connected intellectually to Mrs. Alexander
- (B) wishes she could be like Mrs. Alexander
- (C) feels self-conscious in Mrs. Alexander’s presence
- (D) shuns Mrs. Alexander’s company
- (E) is captivated by Mrs. Alexander’s style

15. The narrator’s attitude toward her situation is best described as

- (A) incredulous
- (B) apprehensive
- (C) contented
- (D) ambivalent
- (E) self-congratulatory



Questions 16-24 are based on the following passage.

*This passage is adapted from a book written by a physicist in 2004.*

Although biological mechanisms do not work with the accuracy or stability of modern clocks, a sense of time and its rhythm is built into the functioning of the human body. *Line*  
 5 Our heart, with its beating pulse, is the clocklike internal rhythm of which we are most aware. In his discovery of the law of the pendulum, which turned out to have the most profound effect on all later time-measuring devices, Galileo used—if legend can be believed—his own pulse beat as the test. There are, however, other biological timekeepers  
 10 that play important roles in our lives. These inner clocks are generally very regular, but they can also be “reset” and will fall in step with a shifted rhythm. Even after we take a long flight across the Atlantic or Pacific, our lack of synchronization with the local time slowly disappears. The  
 15 technical term, introduced in 1959, for the internal timer that keeps track of this 24-hour periodicity and retains it even in the absence of external cues is the circadian system (from the Latin *circa* for “about” or “approximately” and *dies* for “day”). Though known to biologists for over  
 20 200 years, biological clocks have been the subject of intensive research during the last half century.

The first human physiological variables that scientists observed to be governed by a circadian rhythm were pulse rate and body temperature. Even if a person rests in bed  
 25 and fasts, his or her deep-body temperature will vary by almost one degree centigrade between its low in the early morning hours and a high late in the afternoon. More than 100 additional physiological and psychological variables are also subject to diurnal periodicities. For example, the  
 30 speed with which children can do computations varies by about 10 percent between its slowest value in the early morning to a high before noon, dropping to a nadir in the early afternoon, rising again to a peak at about 6 o’clock and then falling off in the evening. This pattern was first  
 35 measured in 1907 and replicated a half century later.

The extremely controversial question that arose immediately was to what extent this human circadian rhythm was an autonomous mechanism rather than a  
 40 simple response to external signals, such as changes in the level of light, the times of meals, or social interactions with our surroundings. It has not been easy to find the answer, but careful laboratory experiments have led to the definite conclusion that our body contains an autonomous timekeeper. Individuals who volunteered to be kept in  
 45 artificial isolation with no time cues of any kind also helped find the answer. In 1962 a French researcher spent two months in a cold cave, 375 feet underground in the Alps. The Frenchman called his aboveground supporters by telephone whenever he ate, went to sleep, and woke,  
 50 and he recorded in detail his thoughts and impressions of the passage of time. He and all such explorers found themselves subject to definite internal time signals. It

turned out, however, that the measured period of their bodily variables (all of which were consistent with one  
 55 another), as well as their subjective impression of the time of day and their periods of sleep and waking, was slightly longer than 25 hours. By the time they emerged from their prolonged isolation, their internal timer was many hours out of phase with the external 24-hour clock.

60 Today, the autonomy of biological clocks is a well-established fact. Though running at a steady rate, our internal clock is “slow” by about an hour per day, but since it is continually automatically reset by cycles of light and dark, under normal circumstances the loss of time is not  
 65 cumulative; our internal clock is entrained with the rhythm of the Sun.

16. The primary purpose of the passage is to

- (A) describe a phenomenon and how it came to be understood
- (B) discuss a problem and several possible solutions
- (C) challenge a widely accepted point of view
- (D) present a new theory and some ways of testing it
- (E) explain the reasoning behind a discredited theory

17. In line 1, “work” most nearly means

- (A) operate
- (B) succeed
- (C) strive
- (D) produce
- (E) influence

18. The statement between the dashes in line 8 (“if . . . believed”) primarily serves to

- (A) present a hypothesis
- (B) explain an assertion
- (C) qualify a statement
- (D) reaffirm a historical account
- (E) provide necessary evidence

19. The reference to a “long flight” (line 13) supports the idea that

- (A) humans adjust to the natural rhythms around them
- (B) humans should avoid unnecessary long-distance travel
- (C) airplane flights are fatiguing for most people
- (D) trans-Pacific flights take longer than trans-Atlantic flights
- (E) not all people synchronize with the local time



20. The sentence in lines 34-35 ("This . . . later") serves primarily to
- (A) acknowledge the existence of a paradox
  - (B) support the validity of an observation
  - (C) describe the details of a finding
  - (D) challenge the results of an experiment
  - (E) emphasize the need for further research
21. Which of the following best expresses the "controversial question" referred to in line 36 ?
- (A) Can the existence of human circadian rhythms be proved?
  - (B) How complex are human circadian rhythms?
  - (C) Has sufficient research been conducted on human circadian rhythms?
  - (D) Why do human circadian rhythms fluctuate so erratically?
  - (E) How independent of outside influences are human circadian rhythms?
22. The "French researcher" (line 46) probably chose the location he did primarily to
- (A) eliminate any effects of the Sun
  - (B) enhance his ability to sleep soundly
  - (C) restrict his access to food and water
  - (D) ensure disruption to his internal clocks
  - (E) limit his communication with other humans
23. Based on the information in the passage as a whole, the "loss of time" would most likely be "cumulative" (lines 64-65) for a person who
- (A) had an extremely irregular pulse rate
  - (B) slept just five hours a night on a regular basis
  - (C) fasted long enough to cause a reduction in deep-body temperature
  - (D) remained in a soundproof, lightproof isolation chamber for several weeks
  - (E) flew from New York City to Tokyo, then after several weeks flew back to New York
24. The tone of the passage is best described as
- (A) argumentative
  - (B) pessimistic
  - (C) concerned and inquisitive
  - (D) playful and irreverent
  - (E) objective and instructive

**STOP**

If you finish before time is called, you may check your work on this section only.  
Do not turn to any other section in the test.

**SECTION 6**

Time — 25 minutes

35 Questions

**Turn to Section 6 (page 6) of your answer sheet to answer the questions in this section.****Directions:** For each question in this section, select the best answer from among the choices given and fill in the corresponding circle on the answer sheet.

The following sentences test correctness and effectiveness of expression. Part of each sentence or the entire sentence is underlined; beneath each sentence are five ways of phrasing the underlined material. Choice A repeats the original phrasing; the other four choices are different. If you think the original phrasing produces a better sentence than any of the alternatives, select choice A; if not, select one of the other choices.

In making your selection, follow the requirements of standard written English; that is, pay attention to grammar, choice of words, sentence construction, and punctuation. Your selection should result in the most effective sentence—clear and precise, without awkwardness or ambiguity.

**EXAMPLE:**

Laura Ingalls Wilder published her first book and she was sixty-five years old then.

- (A) and she was sixty-five years old then
- (B) when she was sixty-five
- (C) at age sixty-five years old
- (D) upon the reaching of sixty-five years
- (E) at the time when she was sixty-five

(A) ● (B) ○ (C) ○ (D) ○ (E) ○

1. After she won a gold medal in figure skating at the 1956 Olympic Games, Tenley Albright attended medical school and becoming a surgeon.
- (A) school and becoming
  - (B) school and became
  - (C) school, also became
  - (D) school, she became
  - (E) school; also becoming

2. In his *Star Wars* films, director George Lucas is a contemporary mythmaker, plus being a master of special effects.
- (A) Lucas is a contemporary mythmaker, plus being
  - (B) Lucas, a contemporary mythmaker, moreover
  - (C) Lucas is a contemporary mythmaker as well as
  - (D) Lucas, who is a contemporary mythmaker and also
  - (E) Lucas is a contemporary mythmaker, he is also
3. Because of geothermal changes beneath Old Faithful, the frequency and duration of the geyser's eruptions are now more predictable.
- (A) eruptions are now more predictable
  - (B) eruptions, they are now more predictable
  - (C) eruptions are predicted more easier now
  - (D) eruptions being easier to predict than before
  - (E) eruptions, they can now be predicted more easily
4. Founded in 1919, the aim of the Bauhaus School was to create a revolutionary modern style that would unite art and mass production.
- (A) aim of the Bauhaus School was
  - (B) aim of the Bauhaus School having been
  - (C) Bauhaus School, whose aim was
  - (D) Bauhaus School aiming
  - (E) Bauhaus School aimed





5. Coleman Hawkins is often called the “father of the tenor saxophone” on account of he was the first to realize the instrument’s expressive powers.
- (A) saxophone” on account of he was  
 (B) saxophone” because he was  
 (C) saxophone” due to him being  
 (D) saxophone,” which he was  
 (E) saxophone,” he was
6. The ship will not leave port until every one of the crew members have been examined by a physician and given a clean bill of health.
- (A) have been  
 (B) has been  
 (C) had been  
 (D) are  
 (E) were
7. It appears that either Jane or Marek will be elected to be presidents of the student union.
- (A) to be presidents  
 (B) as presidents  
 (C) presidents  
 (D) for president  
 (E) president
8. Apparently honoring the actor’s desire for a flattering biography, there is no mention by the author of any of the scandals in which her subject was involved.
- (A) there is no mention by the author of any of the scandals in which her subject was involved  
 (B) none of the scandals in which her subject was involved is mentioned by the author  
 (C) none of the scandals in which her subject was involved are mentioned by the author  
 (D) the author does not mention any of the scandals in which her subject was involved  
 (E) the author mentions none of the scandals in which her subject were involved
9. An odd friendship in certain respects, she being an outdoor enthusiast and he a dedicated bookworm.
- (A) An odd friendship  
 (B) As an odd friendship  
 (C) Their friendship being odd  
 (D) Theirs was an odd friendship  
 (E) Having a friendship that was somewhat odd
10. Each of the men who attended the meeting were suspected to be a spy.
- (A) were suspected to be a spy  
 (B) were suspected to be spies  
 (C) were suspected of being spies  
 (D) was suspected of being spies  
 (E) was suspected of being a spy
11. The island of Madagascar, off the coast of Africa, is the habitat of more than 200,000 species of plants and animals, many are not found anywhere else on the planet.
- (A) animals, many are not found anywhere  
 (B) animals; many, not found anywhere  
 (C) animals; of which many are not found anywhere  
 (D) animals, many found nowhere  
 (E) animals, finding many nowhere



The following sentences test your ability to recognize grammar and usage errors. Each sentence contains either a single error or no error at all. No sentence contains more than one error. The error, if there is one, is underlined and lettered. If the sentence contains an error, select the one underlined part that must be changed to make the sentence correct. If the sentence is correct, select choice E. In choosing answers, follow the requirements of standard written English.

EXAMPLE:

The other delegates and him immediately  
 A B C  
 accepted the resolution drafted by the  
 D  
 neutral states. No error  
 E

(A) ● (C) (D) (E)

12. This film has earned more money from ticket  
 A B C  
 sales than have its closest competitor for the  
 D  
 Best Documentary Feature Film Award. No error  
 E
13. Dr. Ling strongly encouraged each of us contacting  
 A B C  
 our federal and state representatives and urge them  
to increase funding for elementary school music  
 D  
 programs. No error  
 E

14. In the years following the Second World War,  
 A  
 as millions of soldiers returned to civilian life,  
 the demand for housing will cause a massive  
 B C  
expansion of suburbs. No error  
 D E
15. Because they build nests on telephone poles  
 A B  
 as readily as they do in trees, ospreys adapting  
 C D  
 well to various environments. No error  
 E
16. Whiptails, the more speedier of lizards, are  
 A  
 remarkable creatures because in thirteen  
 B  
of the known species the females reproduce without  
 C D  
 mating with males. No error  
 E
17. Scientists have discovered that walnut trees respond to  
 A  
 environmental stresses such as drought by producing  
 B C  
 significant amounts of a substance similar to aspirin.  
 D  
No error  
 E



18. For our hike, my two companions and I had chose  
to walk along the Appalachian Trail, one of the  
oldest and best-loved hiking paths in the  
United States. No error
19. When people see Lake Michigan for the first time,  
he or she may think that it looks more like  
an ocean than a lake. No error
20. Teeming with hundreds of species of tropical fish, the  
clear waters of the Caribbean Sea provide a paradise  
for scuba divers. No error
21. The museum's latest exhibition, featuring the works  
of several relatively young artists, have been praised  
in reviews by influential art critics. No error
22. The proposed environmental legislation would devote  
billions of dollars in federal grants to conservation  
activities such as acquiring new public lands,  
preserving coastal habitats, and to establish urban  
parks. No error
23. Though the island was formed by volcanic action  
long ago, volcanic activity still threatens its  
inhabitants occasionally. No error
24. Damselflies closely resemble dragonflies except that  
when at rest an adult damselfly holds its wings parallel  
to the body, while a dragonfly holds theirs  
perpendicular to the body. No error
25. Each girl in my class wanted to have a  
quinceañera—an elaborate party with plenty of food  
and dancing—to celebrate her fifteenth birthday.  
No error



26. Experts who decipher ancient written languages  
A  
report that the Indus civilization's script is  
B  
more difficult to decode than other civilizations.  
C D  
No error  
E
27. Although both birds are known for their distinctive  
A B  
songs, but the rufous songlark has a sweeter song  
C  
than has the brown songlark. No error  
D E
28. Because sound waves travel faster in liquids  
A B  
than they do in gases, the speed of sound in water  
C  
is greater than that of sound in the air. No error  
D E
29. Mary Whiton Calkins was an imminent psychologist  
A  
and philosopher whose research focused on such  
B C  
topics as memory, consciousness, and dreams.  
D  
No error  
E

**Directions:** The following passage is an early draft of an essay. Some parts of the passage need to be rewritten.

Read the passage and select the best answers for the questions that follow. Some questions are about particular sentences or parts of sentences and ask you to improve sentence structure or word choice. Other questions ask you to consider organization and development. In choosing answers, follow the requirements of standard written English.

Questions 30-35 refer to the following passage.

(1) The word "dinosaur" is derived from two Greek words meaning "terrifying lizard." (2) This fact might therefore lead you to think that today's reptiles—including lizards—are descended from dinosaurs. (3) Modern reptiles are probably not directly related to the dinosaurs. (4) Instead, it is birds, not reptiles, that most scientists now think are the dinosaurs' true descendants. (5) Some even say that birds *are* dinosaurs—dinosaurs as they have evolved over millions of years. (6) That claim may sound incredible. (7) It is based on extensive fossil evidence.

(8) A definite evolutionary connection between birds and dinosaurs was first uncovered in 1861. (9) The fossil was the petrified remains of an animal that in many respects resembled a small, winged dinosaur. (10) There was, similarly, one astonishing difference between this fossil and any dinosaur fossil previously found. (11) The newly discovered animal's body was covered with fully developed feathers. (12) Scientists gave the creature the name *Archaeopteryx*, which means "ancient wing" in Greek, and declared it a transitional species between dinosaurs and birds. (13) Ancient Greek is a language that lends itself to forming logical compound words such as these.

(14) In the years since that discovery, scientists have unearthed other unique fossils. (15) These fossils show that dinosaurs and birds share many common skeletal features. (16) They reveal that several species of dinosaurs had what look like primitive feathers. (17) They indicate that some dinosaurs brooded over their nests, much as chickens do. (18) There is even fossil evidence that a few dinosaurs had four-chambered hearts. (19) That means that they may have been warm-blooded—just like birds but unlike modern reptiles, which are all cold-blooded.



30. In context, which of the following would be best to place at the beginning of sentence 3 (reproduced below) ?

*Modern reptiles are probably not directly related to the dinosaurs.*

- (A) In any case,
- (B) It is believed that
- (C) As it turns out, though,
- (D) They now say that
- (E) Moreover, it appears that

31. In context, which is the best way to revise and combine sentences 6 and 7 (reproduced below) ?

*That claim may sound incredible. It is based on extensive fossil evidence.*

- (A) As incredible as that claim may sound, it is based on extensive fossil evidence.
- (B) That claim may sound incredible, but he based it on extensive fossil evidence.
- (C) The claim is based on extensive fossil evidence, but they sound incredible to us.
- (D) That claim sounds incredible; it will need to be based on extensive fossil evidence.
- (E) Based on extensive fossil evidence, that claim may yet have sounded incredible.

32. In context, which of the following would be the most effective revision of the underlined portion of sentence 10 (reproduced below) ?

*There was, similarly, one astonishing difference between this fossil and any dinosaur fossil previously found.*

- (A) obviously
- (B) however
- (C) they claimed
- (D) therefore
- (E) in retrospect

33. In context, which is the best way to deal with sentence 13 (reproduced below) ?

*Ancient Greek is a language that lends itself to forming logical compound words such as these.*

- (A) Insert it immediately after sentence 1.
- (B) Delete it from the passage.
- (C) Change “is” to “was”.
- (D) Change “lends” to “lent”.
- (E) Change “these” to “Archaeopteryx”.

34. In context, which of the following would be the most effective revision of the underlined portion of sentence 14 (reproduced below) ?

*In the years since that discovery, scientists have unearthed other unique fossils.*

- (A) many others
- (B) many interesting fossils
- (C) more of these kinds of fossils
- (D) other fossils that confirm the link between dinosaurs and birds
- (E) fossils that provide evidence disproving these early findings

35. Where in the passage would the following sentence best be inserted?

*It was then that a worker in a German limestone quarry accidentally discovered an unusual fossil.*

- (A) Immediately before sentence 5
- (B) Immediately before sentence 9
- (C) Immediately before sentence 11
- (D) Immediately before sentence 12
- (E) Immediately before sentence 15

**STOP**

If you finish before time is called, you may check your work on this section only.  
Do not turn to any other section in the test.

## SECTION 7

Time — 25 minutes

18 Questions

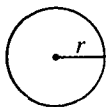
Turn to Section 7 (page 6) of your answer sheet to answer the questions in this section.

**Directions:** This section contains two types of questions. You have 25 minutes to complete both types. For questions 1-8, solve each problem and decide which is the best of the choices given. Fill in the corresponding circle on the answer sheet. You may use any available space for scratch work.

Notes

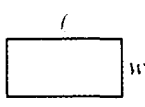
- The use of a calculator is permitted.
- All numbers used are real numbers.
- Figures that accompany problems in this test are intended to provide information useful in solving the problems. They are drawn as accurately as possible EXCEPT when it is stated in a specific problem that the figure is not drawn to scale. All figures lie in a plane unless otherwise indicated.
- Unless otherwise specified, the domain of any function  $f$  is assumed to be the set of all real numbers  $x$  for which  $f(x)$  is a real number.

Reference Information

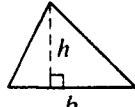


$$A = \pi r^2$$

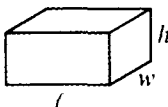
$$C = 2\pi r$$



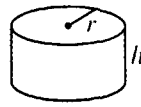
$$A = lw$$



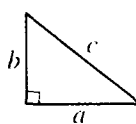
$$A = \frac{1}{2}bh$$



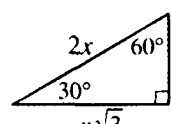
$$V = lwh$$



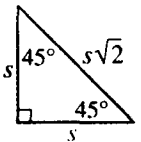
$$V = \pi r^2 h$$



$$c^2 = a^2 + b^2$$



Special Right Triangles



The number of degrees of arc in a circle is 360.

The sum of the measures in degrees of the angles of a triangle is 180.

- In the  $xy$ -plane, three of the four vertices of a square have coordinates  $(2, 4)$ ,  $(5, 4)$ , and  $(2, 1)$ . What are the coordinates of the fourth vertex of the square?
  - $(0, 0)$
  - $(1, 2)$
  - $(4, 5)$
  - $(5, 1)$
  - $(5, 8)$
- If 5 times  $t$  is decreased by 8, which of the following represents the result?
  - $8 - 5t$
  - $5t - 8$
  - $5(t - 8)$
  - $5(8 - t)$
  - $8(t - 5)$

GO ON TO THE NEXT PAGE









3. If  $f$  is a function and  $f(3) = 5$ , which of the following CANNOT be the definition of  $f$ ?


- (A)  $f(x) = x - 2$
- (B)  $f(x) = x + 2$
- (C)  $f(x) = 8 - x$
- (D)  $f(x) = 2x - 1$
- (E)  $f(x) = 3x - 4$

5. The measures of the angles of  $\triangle ABC$  are  $a^\circ$ ,  $b^\circ$ , and  $c^\circ$ . If  $a + b = 110$  and  $b + c = 105$ , what is the value of  $b$ ?

- (A) 30
- (B) 35
- (C) 40
- (D) 45
- (E) 50

PROJECTED SENIOR POPULATION OF THE UNITED STATES BY AGE AND GENDER IN 2050

| Age Bracket | Male  | Female  |
|-------------|---|---|
| 85 and over |  |  |
| 75-84       |  |  |
| 65-74       |  |  |
| 55-64       |  |  |

 represents 4 million people.

4. According to the pictogram above, in 2050 the male population in which age bracket is projected to make up two-fifths of the total population in that age bracket?

- (A) 55-64
- (B) 55-74
- (C) 65-74
- (D) 75-84
- (E) 85 and over

6. If  $S$  is the set of prime numbers between 1 and 20 and  $T$  is the set of all positive multiples of 3 or 5, how many numbers appear in both  $S$  and  $T$ ?

- (A) Five
- (B) Four
- (C) Three
- (D) Two
- (E) One

GO ON TO THE NEXT PAGE 

7. If  $a^2 - 2ab + b^2 = ab$ , then which of the following is equivalent to  $a^2 + b^2$ ?

- (A)  $3ab$
- (B)  $ab$
- (C)  $0$
- (D)  $-ab$
- (E)  $-3ab$

|                          |                          |                          |                          |                          |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 1                        | 2                        | 3                        | 4                        | 5                        |

8. The letters  $A$ ,  $B$ ,  $C$ ,  $D$ , and  $E$  are to be arranged in the boxes above, one in each box, in the following way.  $A$  must be between  $C$  and  $D$ ,  $B$  must be next to  $E$ , and  $C$  cannot be in the first or fifth positions. How many different arrangements of these letters are possible?

- (A) One
- (B) Two
- (C) Four
- (D) Six
- (E) Eight

GO ON TO THE NEXT PAGE 



Directions: For Student-Produced Response questions 9-18, use the grids at the bottom of the answer sheet page on which you have answered questions 1-8.

Each of the remaining 10 questions requires you to solve the problem and enter your answer by marking the circles in the special grid, as shown in the examples below. You may use any available space for scratch work.

Answer:  $\frac{7}{12}$

Write answer in boxes. →

|   |   |   |   |
|---|---|---|---|
| 7 | / | 1 | 2 |
| ○ | ○ | ○ | ○ |
| ○ | ● | ○ | ○ |
| 1 | 1 | 1 | 1 |
| 2 | 2 | 2 | ● |
| 3 | 3 | 3 | 3 |
| 4 | 4 | 4 | 4 |
| 5 | 5 | 5 | 5 |
| 6 | 6 | 6 | 6 |
| ● | 7 | 7 | 7 |
| 8 | 8 | 8 | 8 |
| 9 | 9 | 9 | 9 |

← Fraction line

Grid in result. →

Answer: 2.5

|   |   |   |   |
|---|---|---|---|
| 2 | . | 5 |   |
| ○ | ○ | ○ | ○ |
| ○ | ○ | ○ | ○ |
| 1 | 1 | 1 | 1 |
| 2 | ● | 2 | 2 |
| 3 | 3 | 3 | 3 |
| 4 | 4 | 4 | 4 |
| 5 | 5 | 5 | 5 |
| 6 | 6 | 6 | 6 |
| 7 | 7 | 7 | 7 |
| 8 | 8 | 8 | 8 |
| 9 | 9 | 9 | 9 |

← Decimal point

Answer: 201

Either position is correct.

|   |   |   |   |
|---|---|---|---|
| 2 | 0 | 1 |   |
| ○ | ○ | ○ | ○ |
| ○ | ○ | ○ | ○ |
| 1 | 1 | 1 | 1 |
| 2 | ● | 2 | 2 |
| 3 | 3 | 3 | 3 |
| 4 | 4 | 4 | 4 |

|   |   |   |   |
|---|---|---|---|
| 2 | 0 | 1 |   |
| ○ | ○ | ○ | ○ |
| ○ | ○ | ○ | ○ |
| 1 | 1 | 1 | 1 |
| 2 | ○ | 2 | 2 |
| 3 | 3 | 3 | 3 |
| 4 | 4 | 4 | 4 |

Note: You may start your answers in any column, space permitting. Columns not needed should be left blank.

- Mark no more than one circle in any column.
- Because the answer sheet will be machine-scored, you will receive credit only if the circles are filled in correctly.
- Although not required, it is suggested that you write your answer in the boxes at the top of the columns to help you fill in the circles accurately.
- Some problems may have more than one correct answer. In such cases, grid only one answer.
- No question has a negative answer.
- Mixed numbers such as  $3\frac{1}{2}$  must be gridded as 3.5 or 7/2. (If  $\frac{31}{2}$  is gridded, it will be interpreted as  $\frac{31}{2}$ , not  $3\frac{1}{2}$ .)

- **Decimal Answers:** If you obtain a decimal answer with more digits than the grid can accommodate, it may be either rounded or truncated, but it must fill the entire grid. For example, if you obtain an answer such as 0.6666..., you should record your result as .666 or .667. A less accurate value such as .66 or .67 will be scored as incorrect.

Acceptable ways to grid  $\frac{2}{3}$  are:

|   |   |   |   |
|---|---|---|---|
| 2 | / | 3 |   |
| ○ | ○ | ○ | ○ |
| ○ | ○ | ○ | ○ |
| 1 | 1 | 1 | 1 |
| 2 | ○ | 2 | 2 |
| 3 | 3 | 3 | 3 |
| 4 | 4 | 4 | 4 |
| 5 | 5 | 5 | 5 |
| 6 | 6 | 6 | 6 |

|   |   |   |   |
|---|---|---|---|
| . | 6 | 6 | 6 |
| ○ | ○ | ○ | ○ |
| ○ | ○ | ○ | ○ |
| 1 | 1 | 1 | 1 |
| 2 | 2 | 2 | 2 |
| 3 | 3 | 3 | 3 |
| 4 | 4 | 4 | 4 |
| 5 | 5 | 5 | 5 |
| 6 | ○ | 6 | 6 |

|   |   |   |   |
|---|---|---|---|
| . | 6 | 6 | 7 |
| ○ | ○ | ○ | ○ |
| ○ | ○ | ○ | ○ |
| 1 | 1 | 1 | 1 |
| 2 | 2 | 2 | 2 |
| 3 | 3 | 3 | 3 |
| 4 | 4 | 4 | 4 |
| 5 | 5 | 5 | 5 |
| 6 | ○ | 6 | 6 |

9. At a certain camp, the counselor-to-camper ratio is 2 to 9. If the camp has 18 counselors, how many campers does it have?

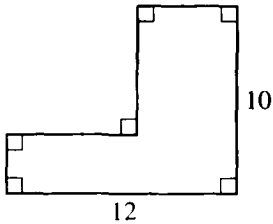
10. If  $\frac{3}{4}x = \frac{3}{4}$ , what is the value of  $\frac{3}{4} + x$ ?

GO ON TO THE NEXT PAGE

**CALORIES YIELDED  
FROM NUTRIENTS**

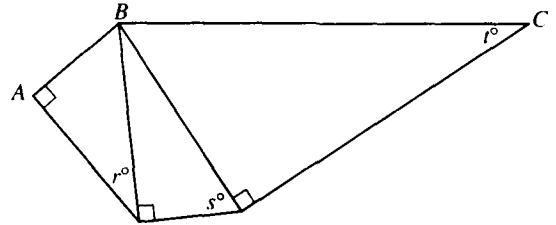
| Nutrient      | Calories per Gram |
|---------------|-------------------|
| Carbohydrates | 4                 |
| Protein       | 4                 |
| Fat           | 9                 |

11. According to the table above, what is the total number of calories yielded from 200 grams of protein and 100 grams of fat?



12. What is the perimeter of the six-sided figure above?

13. For a dog that weighs  $w$  pounds and is  $x$  inches long to qualify for a certain competition, the difference between  $w$  and  $\frac{3}{2}x$  can be no more than 5. If a dog with length 24 inches qualifies for the competition, what is one possible weight, in pounds, of this dog?



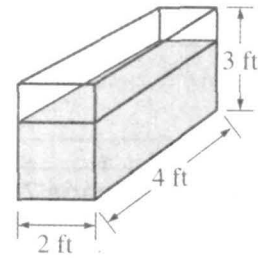
14. In the figure above,  $\angle ABC$  has measure  $140^\circ$ . What is the value of  $r + s + t$ ?

$$x + y + z = 500$$

$$x - y - z = 200$$

15. According to the equations above, what is the value of  $y + z$ ?

16. In the  $xy$ -plane, the line with equation  $y = 8 - \frac{4}{3}x$  intersects the  $x$ -axis and  $y$ -axis at the points  $A$  and  $B$ , respectively. What is the length of line segment  $\overline{AB}$ ?



17. The inner dimensions of a closed rectangular tank are shown in the figure above. There is 16 cubic feet of water in the tank. The tank will be repositioned on level ground so that it rests on one of the faces that has the least area. What will be the height, in feet, of the water after the tank has been repositioned?



18. On the number line above, tick marks are spaced so that the distance from  $a$  to  $b$  is twice the distance from  $b$  to  $c$  and the distance from  $b$  to  $c$  is twice the distance from  $c$  to  $d$ . If  $a$ ,  $b$ ,  $c$ , and  $d$  are positive integers, what is the smallest possible value of  $d$ ?

**STOP**

If you finish before time is called, you may check your work on this section only.  
Do not turn to any other section in the test.

**SECTION 8**

Time — 20 minutes

19 Questions

**Turn to Section 8 (page 7) of your answer sheet to answer the questions in this section.****Directions:** For each question in this section, select the best answer from among the choices given and fill in the corresponding circle on the answer sheet.

Each sentence below has one or two blanks, each blank indicating that something has been omitted. Beneath the sentence are five words or sets of words labeled A through E. Choose the word or set of words that, when inserted in the sentence, best fits the meaning of the sentence as a whole.

**Example:**

Hoping to ----- the dispute, negotiators proposed a compromise that they felt would be ----- to both labor and management.

- (A) enforce . . useful  
(B) end . . divisive  
(C) overcome . . unattractive  
(D) extend . . satisfactory  
(E) resolve . . acceptable

(A) (B) (C) (D) ●

- Marie Curie is ----- among female Nobel Prize winners: she alone has been honored in two different fields.  
(A) unique (B) unsung (C) immune  
(D) resigned (E) helpless
- John Updike's literary ----- was -----: it included novels, short stories, essays, poetry, criticism, children's books, and more.  
(A) output . . diverse  
(B) technique . . limited  
(C) analysis . . generic  
(D) achievement . . minimal  
(E) judgment . . commonplace
- While most pets are relatively ----- in a veterinarian's office, occasionally vets have to treat more aggressive animal patients.  
(A) fastidious (B) defensive (C) surreptitious  
(D) docile (E) diminutive
- Biodemographer S. Jay Olshansky regards commercial products that promise to stop aging as -----, arguing that while these nostrums might possibly ----- some of aging's superficial manifestations, they cannot touch the process at its core.  
(A) humbuggery . . elude  
(B) foreshadowing . . thwart  
(C) quackery . . forestall  
(D) sophistry . . enhance  
(E) balderdash . . mimic
- Rosario ----- on the problem at length, but no amount of extended reflection could provide her with a satisfactory solution.  
(A) collaborated (B) extemporized  
(C) expounded (D) expostulated  
(E) ruminated
- Because Russell was such a memorable and ----- public speaker, many people mistook his ability to talk about a wide range of topics for genuine -----.  
(A) enervating . . inquisitiveness  
(B) charismatic . . animosity  
(C) fluent . . evasiveness  
(D) daunting . . diffidence  
(E) adroit . . erudition



The passage below is followed by questions based on its content. Answer the questions on the basis of what is stated or implied in the passage and in any introductory material that may be provided.

**Questions 7-19 are based on the following passage.**

*The passage is adapted from a 2009 book about traffic.*

When driving began, it was like a juggernaut, and we have rarely had time to pause and reflect upon the new kind of life that was being made. When the first electric car debuted in mid-nineteenth-century England, the speed limit was hastily set at four miles per hour: the speed at which a man carrying a red flag could run ahead of a car entering a town, an event that was still a quite rare occurrence. It was probably also the last time the automobile existed at anything like human speed or scale.

At first, cars simply joined the chaotic traffic already in the street, where the only real rule of the road in most North American cities was “keep to the right.” In 1902, William Phelps Eno, who would become known as “the first traffic technician in the world,” set about untangling the strangling miasma that was New York City’s streets. Eno proposed a series of “radical ordinances” to rein in New York’s traffic, a plan that seems hopelessly quaint now, with instructions such as the “right way to turn a corner.” But Eno, who became a global celebrity of sorts, boating off to Paris and São Paulo to solve local traffic problems, was as much a social engineer as a traffic engineer, teaching vast numbers of people to act and communicate in new ways, often against their will.

In the beginning this language simply served to confuse. In one town, the blast of a policeman’s whistle might mean stop, in another go. A red light indicated one thing here, another thing there. The first stop signs were yellow, even though many people thought they should be red. As one traffic engineer summed up early-twentieth-century traffic control, “There was a great wave of arrow lenses, purple lenses, lenses with crosses, etc., all giving special instructions to the motorist, who, as a rule, hadn’t the faintest idea of what these special indications meant.” The systems we take for granted today required years of evolution and were often steeped in controversy. Were red and green even the right colors for traffic lights? In 1923 it was pointed out that approximately one in ten people saw only gray when looking at a traffic signal, because of color blindness. Might not blue and yellow, which almost everyone could see, be better? Or would that create catastrophic confusion among those who had already learned red and green? Despite all the uncertainty, traffic engineering soon hoisted itself onto a wobbly pedestal of authority, even if, as the transportation historian Jeffrey Brown argues, engineers’ neutral-sounding scientific ideology, which compared “curing” congestion to fighting disease, reflected the desires of a narrow band of urban elites (i.e., car owners). Thus it was quickly established that

the prime objective of a street was simply to move as many cars as quickly as possible: an idea that obscured, as it does to this day, the many other roles of city streets.

After more than a century of tinkering with traffic, plus years of tradition and scientific research, one would think that all these issues would have been smoothed out. And they have been, largely. We drive in a landscape that looks virtually the same wherever we go: a red light in Morocco means the same thing as it does in Montana. We drive on highways that have been so perfectly engineered that we forget we are moving at high speeds. Indeed, we are sometimes barely aware of moving at all.

For all this standardized sameness, though, there is much that is still simply not known about how to manage the flows of all those people in traffic—drivers, walkers, cyclists, and others—in the safest and most efficient manner. For example, in some cities a countdown signal indicates, in seconds, exactly how much time you have before the “Walk” signal will change to “Don’t Walk.” Some people in the traffic world think this innovation has made things better for pedestrians, but it is just as easy to find others who think it offers no improvement at all. Some people think that marked bicycle lanes on streets are ideal for cyclists, while others prefer separated lanes; still others suggest that having no bicycle lanes at all would be best for bike riders.

Henry Barnes, the legendary traffic commissioner of New York City in the 1960s, reflecting on his long career in his charmingly titled memoir *The Man with the Red and Green Eyes*, observed that “traffic was as much an emotional problem as it was a physical and mechanical one.” People, he concluded, were tougher to crack than cars.

7. The scenario in lines 3-7 (“When . . . occurrence”) is best characterized as
- (A) a landmark traffic decision  
(B) an entertaining historical fact  
(C) an annoying aristocratic custom  
(D) an exceptionally dangerous behavior  
(E) a potentially useful lesson
8. Lines 10-12 (“At . . . right”) indicate that traffic flow in North American cities before the invention of the automobile was
- (A) well regarded  
(B) enjoyable  
(C) cautious  
(D) disorderly  
(E) violent



9. The reference to “keep to the right” (line 12) serves primarily to
- (A) commend the person who invented the rule
  - (B) emphasize the universal importance of rules
  - (C) indicate a rule that should have been nullified
  - (D) suggest that most subsequent rules have been arbitrary
  - (E) underscore the lack of agreed-upon traffic rules
10. Which of the following is most analogous to the description of William Phelps Eno in lines 19-21 (“But . . . problems”)?
- (A) An international celebrity takes time to meet individually with several of her fans.
  - (B) A state recycling coordinator is asked by other states to run workshops on recycling.
  - (C) A business executive visits companies in other nations to learn new sales strategies.
  - (D) A successful government energy official decides to become a high school science teacher.
  - (E) An inexperienced new driver volunteers to serve on his town’s traffic advisory committee.
11. The reference to the two types of engineers in lines 21-22 (“was . . . engineer”) is used largely to support which of the following points?
- (A) New York City’s traffic problems were unique.
  - (B) Eno was a better teacher than he was an engineer.
  - (C) Engineering skills can be applied to many different fields.
  - (D) Changes in human behavior were needed as well as new traffic rules.
  - (E) People became confused by the abundance of new traffic regulations.
12. The discussion in lines 22-23 (“teaching . . . will”) implies that automobile drivers in the early 1900s initially
- (A) challenged the legality of the new rules
  - (B) objected to the rules favoring pedestrians
  - (C) resented the limitations imposed by the new rules
  - (D) struggled to understand the need for the single traffic rule
  - (E) felt suspicious of Eno’s celebrity status
13. The examples in lines 25-33 (“In one . . . meant”) are used to support the point that
- (A) standardization was needed
  - (B) color choices were limited
  - (C) words can be ambiguous
  - (D) simplicity was impossible
  - (E) more police officers were required
14. The questions in lines 35-42 (“Were red . . . green?”) primarily serve to
- (A) provide exceptions to generalizations
  - (B) highlight issues that required resolution
  - (C) challenge commonly held assumptions
  - (D) clarify the benefits of an important decision
  - (E) propose a distinction between similar views
15. Lines 42-44 (“traffic . . . authority”) suggest that traffic engineers were able to
- (A) make unimpeded progress
  - (B) achieve immediate consensus
  - (C) gain an appreciable amount of influence
  - (D) consult a diverse array of motorists
  - (E) seize power from wealthy urbanites
16. The references to “Morocco” (line 56) and “Montana” (line 57) serve to emphasize the
- (A) variety of traffic issues worldwide
  - (B) importance of the color red in traffic lights
  - (C) necessity of adjusting speed limits on highways
  - (D) uniformity of most modern traffic signals
  - (E) complexity of constructing global highway systems
17. In lines 63-64, “walkers” and “cyclists” are mentioned as examples of people who
- (A) enjoy physical exercise in outdoor locations
  - (B) move safely and efficiently on city streets
  - (C) prefer not to use public transportation
  - (D) share busy streets with motorists
  - (E) save gas by not using automobiles



18. Which generalization about the use of “marked bicycle lanes” (line 71) is most directly supported by the passage?
- (A) Bicycles and automobiles should be kept apart.
  - (B) Cyclists are treated like second-class citizens.
  - (C) The lanes interfere with the flow of traffic.
  - (D) This idea has proved to be a model of innovation.
  - (E) There is currently little consensus about this topic.
19. The passage is best described as
- (A) a consideration of challenges in regulating traffic
  - (B) a criticism of the professional qualifications of traffic engineers
  - (C) an account of the impact of the invention of the automobile
  - (D) an argument for giving priority to pedestrian traffic
  - (E) an explanation of a puzzling event in automotive history

**STOP**

If you finish before time is called, you may check your work on this section only.  
Do not turn to any other section in the test.



## SECTION 9

Time — 20 minutes

16 Questions

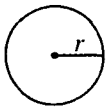
Turn to Section 9 (page 7) of your answer sheet to answer the questions in this section.

**Directions:** For this section, solve each problem and decide which is the best of the choices given. Fill in the corresponding circle on the answer sheet. You may use any available space for scratch work.

Notes

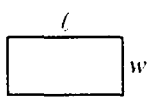
- The use of a calculator is permitted.
- All numbers used are real numbers.
- Figures that accompany problems in this test are intended to provide information useful in solving the problems. They are drawn as accurately as possible EXCEPT when it is stated in a specific problem that the figure is not drawn to scale. All figures lie in a plane unless otherwise indicated.
- Unless otherwise specified, the domain of any function  $f$  is assumed to be the set of all real numbers  $x$  for which  $f(x)$  is a real number.

Reference Information

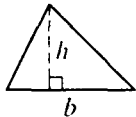


$$A = \pi r^2$$

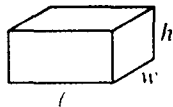
$$C = 2\pi r$$



$$A = lw$$



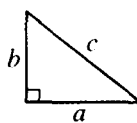
$$A = \frac{1}{2}bh$$



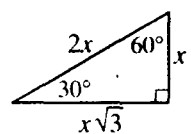
$$V = lwh$$



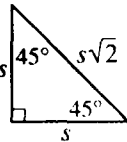
$$V = \pi r^2 h$$



$$c^2 = a^2 + b^2$$



Special Right Triangles



The number of degrees of arc in a circle is 360.

The sum of the measures in degrees of the angles of a triangle is 180.

1. If  $y = x + 50$ , then  $\frac{1}{10}(y - x) =$

- (A) 5  
(B) 25  
(C) 50  
(D) 250  
(E) 500

2. If  $8 + x$  is 4 more than 16, what is the value of  $2x$ ?

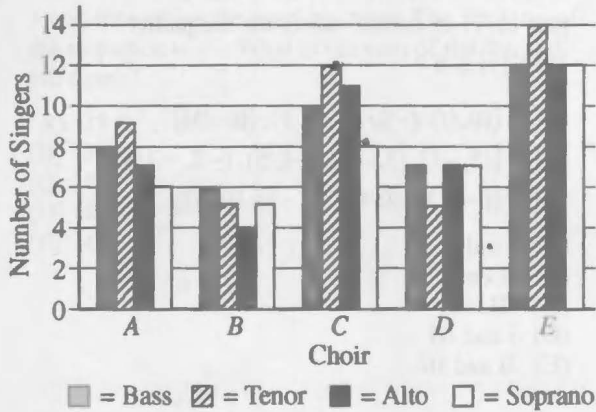
- (A) 12  
(B) 14  
(C) 24  
(D) 40  
(E) 56

GO ON TO THE NEXT PAGE





SINGERS IN FIVE DIFFERENT CHOIRS



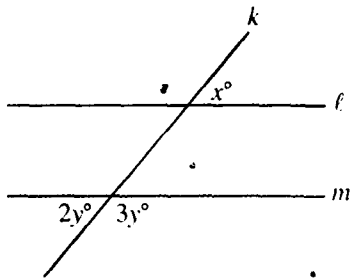
3. The bar graph above shows the number of singers in each voice section of five choirs. If choir A were to be combined with choir C to form a single new choir, the new choir would have how many more tenors than choir E?
- (A) Four  
(B) Five  
(C) Seven  
(D) Eight  
(E) Nine

4. If  $x^{3y} = 27$ , what does  $x^y$  equal?

- (A) 3  
(B) 6  
(C) 9  
(D) 12  
(E) 81

5. If  $k > 0$ , which of the following CANNOT be equal to  $\frac{8}{20k}$ ?

- (A) 0  
(B) 0.2  
(C) 0.4  
(D) 0.8  
(E) 4



Note: Figure not drawn to scale.

6. In the figure above, lines  $l$  and  $m$  are parallel. What is the value of  $x$ ?
- (A) 24  
 (B) 36  
 (C) 54  
 (D) 72  
 (E) 108

7. On a certain day, 85 men and 155 women each made purchases at a department store. If 40 percent of these people purchased clothing and if 42 of those who purchased clothing were men, how many women purchased clothing?
- (A) 42  
 (B) 54  
 (C) 62  
 (D) 82  
 (E) 96

8. For which of the following sets does each ordered pair  $(x, y)$  in the set satisfy the inequality  $|x| + |y| \leq 5$ ?

- I.  $\{(0, 0), (-2, 3), (0, 5), (0, -5)\}$   
 II.  $\{(5, -1), (3, -2), (-1, 5), (-2, -2)\}$   
 III.  $\{(-2, 3), (0, 0), (4, -1), (0, 6)\}$

- (A) I only  
 (B) II only  
 (C) III only  
 (D) I and III  
 (E) II and III

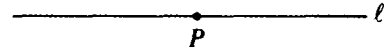


9. In a certain sequence, each term after the first term is 3 less than twice the previous term. The 5th term of the sequence is 17. What is the sum of the 4th and 6th terms?

(A) 35  
(B) 38  
(C) 41  
(D) 44  
(E) 47

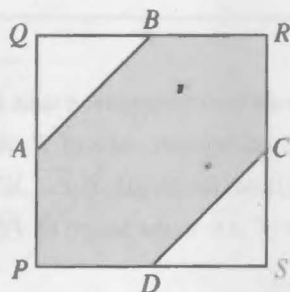
10. At a department store,  $\frac{3}{5}$  of the items are discounted by 50 percent,  $\frac{1}{5}$  of the items are discounted by 70 percent,  $\frac{1}{10}$  of the items are discounted by 80 percent, and all other items are not discounted. If one item is to be chosen at random, what is the probability that the item is discounted by either 50 percent or 70 percent?

(A)  $\frac{1}{5}$   
(B)  $\frac{3}{10}$   
(C)  $\frac{3}{5}$   
(D)  $\frac{7}{10}$   
(E)  $\frac{4}{5}$



11. In the figure above, two points  $A$  and  $B$  (not labeled) are on line  $\ell$  on opposite sides of  $P$ , and the length of  $\overline{AP}$  is three times the length of  $\overline{PB}$ . What is the ratio of the length of  $\overline{AB}$  to the length of  $\overline{PB}$ ?

(A) 1 to 4  
(B) 1 to 3  
(C) 3 to 4  
(D) 3 to 1  
(E) 4 to 1



12. In square  $PQRS$  above, points  $A$ ,  $B$ ,  $C$ , and  $D$  are midpoints of the sides. If the area of the square is  $z$ , what is the area of the shaded region in terms of  $z$ ?

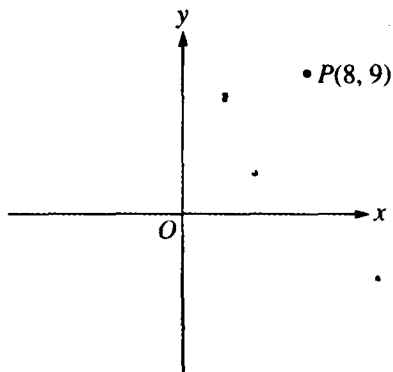
- (A)  $\frac{7}{8}z$   
 (B)  $\frac{3}{4}z$   
 (C)  $\frac{2}{3}z$   
 (D)  $\frac{1}{2}z$   
 (E)  $\frac{1}{4}z$

13. If  $x$  is an even integer, how many even integers are there between  $x + 3$  and  $x + 13$ , inclusive?

- (A) Four  
 (B) Five  
 (C) Six  
 (D) Seven  
 (E) Ten

14. Danielle earned 35 more credits at the state university than she did at the community college. Half the number of credits that she earned at the university is 3 times the number of credits she earned at the community college. How many credits did she earn altogether at both schools?

- (A) 46  
 (B) 47  
 (C) 48  
 (D) 49  
 (E) 50



15. In the  $xy$ -coordinate system above,  $P$  is the center of a circle (not shown). If the radius of the circle is 10, in how many points does the circle intersect the coordinate axes?
- (A) None  
 (B) One  
 (C) Two  
 (D) Three  
 (E) Four

| $b$ | $f(b)$ |
|-----|--------|
| -3  | 6      |
| -2  | 5      |
| 0   | -3     |
| 1   | 0      |
| 4   | -13    |

16. The table above defines the function  $f$ . If the function  $g$  is defined as  $g(b) = f(b) + 2$ , what is the value of  $a$  when  $g(a) = 8$ ?
- (A) -3  
 (B) -2  
 (C) 0  
 (D) 1  
 (E) 4

**STOP**

If you finish before time is called, you may check your work on this section only.  
 Do not turn to any other section in the test.


**SECTION 10**

Time — 10 minutes

14 Questions

Turn to Section 10 (page 7) of your answer sheet to answer the questions in this section.

**Directions:** For each question in this section, select the best answer from among the choices given and fill in the corresponding circle on the answer sheet.

The following sentences test correctness and effectiveness of expression. Part of each sentence or the entire sentence is underlined; beneath each sentence are five ways of phrasing the underlined material. Choice A repeats the original phrasing; the other four choices are different. If you think the original phrasing produces a better sentence than any of the alternatives, select choice A; if not, select one of the other choices.

In making your selection, follow the requirements of standard written English; that is, pay attention to grammar, choice of words, sentence construction, and punctuation. Your selection should result in the most effective sentence—clear and precise, without awkwardness or ambiguity.

**EXAMPLE:**

Laura Ingalls Wilder published her first book and she was sixty-five years old then.

- (A) and she was sixty-five years old then
- (B) when she was sixty-five
- (C) at age sixty-five years old
- (D) upon the reaching of sixty-five years
- (E) at the time when she was sixty-five

(A) ● (C) (D) (E)

1. Just after returning home, the discovery was made that the basement had flooded during our absence.
- (A) Just after returning home, the discovery was made
  - (B) Just after returning home, we discovered
  - (C) Having just returned home was when we discovered
  - (D) We returned home, just thereafter we discovered
  - (E) Our discovery, just after we returned home,

2. Unlike other members of the bear family, which rely at least in part on a diet of insects, fish, mammals, or other meat, but pandas are primarily vegetarians and eat mainly bamboo.

- (A) but pandas are
- (B) but a panda is
- (C) pandas are
- (D) pandas, which are
- (E) that of a panda is

3. Maya Lin is best known for designing the Vietnam Veterans Memorial, but her work also including buildings, furniture, and sculptures in stone, wood, and glass.

- (A) but her work also including
- (B) but her work also includes
- (C) but her work also having included
- (D) her work also includes
- (E) then her work also includes

4. The Mansion House, once home to a thriving utopian community, remained closed to the public for over a century and reopening as a museum in 1987.

- (A) century and reopening
- (B) century, it reopened
- (C) century but reopened
- (D) century, when reopening
- (E) century, so reopening



5. Voicing their concern about heavy traffic near the school, the town council's plan to build a bypass was supported by local parents.
- (A) the town council's plan to build a bypass was supported by local parents  
 (B) local parents supported the town council's plan to build a bypass  
 (C) a plan by the town council to build a bypass was supported by local parents  
 (D) a bypass was planned by the town council and local parents supported building it  
 (E) building a bypass was planned by the town council and supported by local parents
6. Diamond is harder than any other naturally occurring mineral, and the reason is because its carbon atoms are arranged in a strongly bonded crystal structure.
- (A) mineral, and the reason is because  
 (B) mineral; the reason for it is that  
 (C) mineral and because  
 (D) mineral because  
 (E) mineral by
7. Relatively little is known about the Suminoe oyster, which is new to the Chesapeake Bay, this has resulted in it being difficult for scientists to decide whether it may disturb the ecosystem there.
- (A) Bay, this has resulted in it being difficult  
 (B) Bay, which have resulted in difficulty  
 (C) Bay, and results in difficulty  
 (D) Bay; they result in difficulty  
 (E) Bay; as a result, it is difficult
8. The reason that many films succeed is that it reflects the private yearnings of audiences.
- (A) is that it reflects  
 (B) is that they reflect  
 (C) is because of reflecting  
 (D) are because they reflect  
 (E) are their reflection of
9. Dorothy Crowfoot Hodgkin used x-rays to discover the chemical structures of penicillin and vitamin B12, winning a Nobel Prize for her work.
- (A) winning a Nobel Prize for her work  
 (B) she then won a Nobel Prize for her work  
 (C) this work won her a Nobel Prize  
 (D) she won a Nobel Prize for her work  
 (E) her work having won a Nobel Prize for her
10. Although the development of an all-electric airplane is more problematic and complex than an all-electric car, several aeronautical companies are working to design and build all-electric airplanes.
- (A) an all-electric car  
 (B) all-electric cars  
 (C) those of an all-electric car  
 (D) an all-electric car being developed  
 (E) the development of an all-electric car
11. In appearance much like the traditional yellow-fleshed Peruvian potato, Canadian researchers developed the hybrid Yukon Gold potato about 30 years ago.
- (A) Canadian researchers developed the hybrid Yukon Gold potato  
 (B) Canadian researchers have developed the hybrid Yukon Gold potato  
 (C) the hybrid Yukon Gold potato was developed by Canadian researchers  
 (D) however, the hybrid Yukon Gold potato was developed by Canadian researchers  
 (E) but the hybrid Yukon Gold potato was developed by Canadian researchers
12. One of the few marine mammals that makes use of tools are the Indian Ocean bottlenose dolphin, which uses sea sponges to stir sand on the ocean floor while hunting for prey.
- (A) that makes use of tools are  
 (B) that make use of tools are  
 (C) to make use of tools is  
 (D) to make use of tools are  
 (E) to make use of tools,



13. The Institute's exhibition of pictures of Arctic animals displays a firm commitment and a deep interest in the conservation of the world's endangered animal species.
- (A) displays a firm commitment
  - (B) display a firm commitment
  - (C) displays a firm commitment to
  - (D) display a firm commitment to
  - (E) that display a firm commitment
14. In addition to scientific talent, Santiago Ramón y Cajal had artistic talent, as is evidenced by the excellent drawings in his papers about the nervous system.
- (A) as is evidenced by the excellent drawings
  - (B) which the excellent drawings are seen to be evidence of and appeared
  - (C) the excellent drawings which are evidence of this are
  - (D) his excellent drawings as evidence, appearing
  - (E) to be evidenced of in the excellent drawings

## STOP

If you finish before time is called, you may check your work on this section only.  
Do not turn to any other section in the test.



# Correct Answers and Difficulty Levels Form Codes AEIA, BWIA

## Critical Reading

| Section 2               |                         |                         | Section 4               |                         |                         | Section 8               |                         |                         |
|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| COR. DIFF.<br>ANS. LEV. | COR. DIFF.<br>ANS. LEV. | COR. DIFF.<br>ANS. LEV. | COR. DIFF.<br>ANS. LEV. | COR. DIFF.<br>ANS. LEV. | COR. DIFF.<br>ANS. LEV. | COR. DIFF.<br>ANS. LEV. | COR. DIFF.<br>ANS. LEV. | COR. DIFF.<br>ANS. LEV. |
| 1. E 1                  | 13. D 3†                | 1. B 1                  | 13. B 3                 | 1. A 1                  | 11. D 3                 |                         |                         |                         |
| 2. D 1                  | 14. B 5                 | 2. B 2                  | 14. E 3                 | 2. A 1                  | 12. C 3                 |                         |                         |                         |
| 3. B 2                  | 15. A 1                 | 3. A 4                  | 15. C 3                 | 3. D 3                  | 13. A 1                 |                         |                         |                         |
| 4. E 2                  | 16. A 3                 | 4. C 3                  | 16. A 3                 | 4. C 3                  | 14. B 3                 |                         |                         |                         |
| 5. D 5                  | 17. C 3                 | 5. D 5                  | 17. A 2                 | 5. E 5                  | 15. C 3                 |                         |                         |                         |
| 6. A 3                  | 18. D 5                 | 6. A 2                  | 18. C 5                 | 6. E 5                  | 16. D 2                 |                         |                         |                         |
| 7. C 4                  | 19. A 4                 | 7. E 2                  | 19. A 2                 | 7. B 2                  | 17. D 3                 |                         |                         |                         |
| 8. C 5                  | 20. E 4                 | 8. A 2                  | 20. B 3                 | 8. D 1                  | 18. E 4                 |                         |                         |                         |
| 9. C 2                  | 21. E 3                 | 9. C 3                  | 21. E 3                 | 9. E 3                  | 19. A 3                 |                         |                         |                         |
| 10. E 2                 | 22. B 2                 | 10. D 1                 | 22. A 3                 | 10. B 4                 |                         |                         |                         |                         |
| 11. A 3                 | 23. C 4                 | 11. A 2                 | 23. D 3                 |                         |                         |                         |                         |                         |
| 12. C 2                 | 24. †                   | 12. B 3                 | 24. E 3                 |                         |                         |                         |                         |                         |

|                  |                  |                  |
|------------------|------------------|------------------|
| Number correct   | Number correct   | Number correct   |
| Number incorrect | Number incorrect | Number incorrect |

## Mathematics

| Section 3               |                         |                                  | Section 7               |  |                         | Section 9               |                         |                         |
|-------------------------|-------------------------|----------------------------------|-------------------------|--|-------------------------|-------------------------|-------------------------|-------------------------|
| COR. DIFF.<br>ANS. LEV. | COR. DIFF.<br>ANS. LEV. | COR. DIFF.<br>ANS. LEV.          | COR. DIFF.<br>ANS. LEV. | COR. DIFF.<br>ANS. LEV.                    | COR. DIFF.<br>ANS. LEV. | COR. DIFF.<br>ANS. LEV. | COR. DIFF.<br>ANS. LEV. | COR. DIFF.<br>ANS. LEV. |
| 1. B 1                  | 11. E 3                 | <b>Multiple-Choice Questions</b> |                         | <b>Student-Produced Response Questions</b> |                         | 1. A 2                  | 9. C 3                  |                         |
| 2. C 1                  | 12. E 2                 | COR. DIFF.<br>ANS. LEV.          | COR.                    | ANS.                                       | DIFF. LEV.              | 2. C 1                  | 10. E 3                 |                         |
| 3. B 1                  | 13. A 3                 | 1. D 1                           | 9. 81                   | 10. 7/4, 1.75                              | 2                       | 3. C 1                  | 11. E 4                 |                         |
| 4. D 1                  | 14. D 4                 | 2. B 1                           | 10. 1700                | 11. 44                                     | 2                       | 4. A 2                  | 12. B 3                 |                         |
| 5. D 1                  | 15. B 4                 | 3. A 2                           | 12. 31 <= x <= 41       | 13. 130                                    | 2                       | 5. A 2                  | 13. B 3                 |                         |
| 6. C 1                  | 16. D 3                 | 4. E 3                           | 14. 150                 | 15. 10                                     | 3                       | 6. D 3                  | 14. D 4                 |                         |
| 7. A 2                  | 17. C 4                 | 5. B 3                           | 16. 8/3, 2.66, 2.67     | 17. 8                                      | 3                       | 7. B 2                  | 15. E 4                 |                         |
| 8. C 1                  | 18. A 4                 | 6. D 3                           | 18. 8                   |  | 4                       | 8. A 2                  | 16. A 4                 |                         |
| 9. B 2                  | 19. E 4                 | 7. A 3                           |                         |  | 4                       |                         |                         |                         |
| 10. A 3                 | 20. A 5                 | 8. C 4                           |                         |  | 4                       |                         |                         |                         |

|                  |                  |                          |                  |
|------------------|------------------|--------------------------|------------------|
| Number correct   | Number correct   | Number correct<br>(9-18) | Number correct   |
| Number incorrect | Number incorrect |                          | Number incorrect |

## Writing Multiple-Choice

| Section 6               |                         |                         |                         | Section 10              |                         |                         |                         |
|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| COR. DIFF.<br>ANS. LEV. | COR. DIFF.<br>ANS. LEV. | COR. DIFF.<br>ANS. LEV. | COR. DIFF.<br>ANS. LEV. | COR. DIFF.<br>ANS. LEV. | COR. DIFF.<br>ANS. LEV. | COR. DIFF.<br>ANS. LEV. | COR. DIFF.<br>ANS. LEV. |
| 1. B 1                  | 10. E 4                 | 19. B 3                 | 28. E 4                 | 1. B 1                  | 6. D 1                  | 11. C 3                 |                         |
| 2. C 1                  | 11. D 5                 | 20. E 3                 | 29. A 5                 | 2. C 1                  | 7. E 2                  | 12. C 3                 |                         |
| 3. A 1                  | 12. D 1                 | 21. C 3                 | 30. C 3                 | 3. B 1                  | 8. B 3                  | 13. C 5                 |                         |
| 4. E 2                  | 13. C 1                 | 22. D 3                 | 31. A 2                 | 4. C 2                  | 9. A 3                  | 14. A 4                 |                         |
| 5. B 3                  | 14. C 2                 | 23. E 3                 | 32. B 2                 | 5. B 2                  | 10. E 4                 |                         |                         |
| 6. B 3                  | 15. D 1                 | 24. D 4                 | 33. B 3                 |                         |                         |                         |                         |
| 7. E 3                  | 16. A 2                 | 25. E 4                 | 34. D 3                 |                         |                         |                         |                         |
| 8. D 3                  | 17. E 1                 | 26. D 5                 | 35. B 3                 |                         |                         |                         |                         |
| 9. D 4                  | 18. B 2                 | 27. A 4                 |                         |                         |                         |                         |                         |

|                  |                  |
|------------------|------------------|
| Number correct   | Number correct   |
| Number incorrect | Number incorrect |

† Question dropped

**NOTE:** Difficulty levels are estimates of question difficulty for a reference group of college-bound seniors. Difficulty levels range from 1 (easiest) to 5 (hardest).

## The Scoring Process

1. **Scanning.** Your answer sheet is scanned electronically, and the circle you filled in for each question is recorded in a computer file.
2. **Scoring.** The computer compares the circle filled in for each question with the correct response.
  - Each correct answer receives one point.
  - Omitted questions do not count toward your score.
  - One-fourth of a point is subtracted for each wrong answer to multiple-choice questions. No points are subtracted for wrong answers to the student-produced response mathematics questions.

### Example:

The critical reading section, for example, has 67 questions. If you have 37 right, 28 wrong, and 2 omitted, the resulting raw score of 30 is determined as follows:

$$37 - 28 (1/4) = 37 - 7 = 30$$

- If the raw score is a fractional number, it is rounded to the nearest whole number. For example, a raw score of 36.25 is rounded to 36, the nearest whole number. A raw score of 36.50 is rounded upward to 37.
3. **Essay scoring.** Using the scoring guide shown on page 51, specially trained high school and college teachers score the essay. Each essay is read independently by two readers who rate it on a scale of 1 to 6. (If the two scores differ by more than one point, a third reader scores the essay.) The two readers' scores are added together, and the essay subscore is reported on a scale of 2 to 12. The essay section is worth approximately 30 percent of the raw score, and the multiple-choice writing section counts for approximately 70 percent.
  4. **Converting raw scores to scaled scores.** Raw scores are then placed on the scale of 200–800 through a process that adjusts scores to account for minor differences in difficulty among different editions of the test. This process, known as equating, is performed so that a student's reported score is not affected by the edition of the test taken or by the abilities of the group with whom the student takes the test. As a result of placing SAT scores on the College Board scale, scores earned by students at different times can be compared. For example, an SAT mathematics score of 400 on a test taken at one administration indicates the same level of developed mathematics ability as a 400 score obtained on a different edition of the test taken at another time.

# SAT Essay Scoring Guide

## SCORE OF 6

An essay in this category demonstrates *clear and consistent mastery*, although it may have a few minor errors. A typical essay

- effectively and insightfully develops a point of view on the issue and demonstrates outstanding critical thinking, using clearly appropriate examples, reasons, and other evidence to support its position
- is well organized and clearly focused, demonstrating clear coherence and smooth progression of ideas
- exhibits skillful use of language, using a varied, accurate, and apt vocabulary
- demonstrates meaningful variety in sentence structure
- is free of most errors in grammar, usage, and mechanics

## SCORE OF 3

An essay in this category demonstrates *developing mastery*, and is marked by ONE OR MORE of the following weaknesses:

- develops a point of view on the issue, demonstrating some critical thinking, but may do so inconsistently or use inadequate examples, reasons, or other evidence to support its position
- is limited in its organization or focus, or may demonstrate some lapses in coherence or progression of ideas
- displays developing facility in the use of language, but sometimes uses weak vocabulary or inappropriate word choice
- lacks variety or demonstrates problems in sentence structure
- contains an accumulation of errors in grammar, usage, and mechanics

## SCORE OF 5

An essay in this category demonstrates *reasonably consistent mastery*, although it will have occasional errors or lapses in quality. A typical essay

- effectively develops a point of view on the issue and demonstrates strong critical thinking, generally using appropriate examples, reasons, and other evidence to support its position
- is well organized and focused, demonstrating coherence and progression of ideas
- exhibits facility in the use of language, using appropriate vocabulary
- demonstrates variety in sentence structure
  - is generally free of most errors in grammar, usage, and mechanics

## SCORE OF 2

An essay in this category demonstrates *little mastery*, and is flawed by ONE OR MORE of the following weaknesses:

- develops a point of view on the issue that is vague or seriously limited, and demonstrates weak critical thinking, providing inappropriate or insufficient examples, reasons, or other evidence to support its position
- is poorly organized and/or focused, or demonstrates serious problems with coherence or progression of ideas
- displays very little facility in the use of language, using very limited vocabulary or incorrect word choice
- demonstrates frequent problems in sentence structure
- contains errors in grammar, usage, and mechanics so serious that meaning is somewhat obscured

## SCORE OF 4

An essay in this category demonstrates *adequate mastery*, although it will have lapses in quality. A typical essay

- develops a point of view on the issue and demonstrates competent critical thinking, using adequate examples, reasons, and other evidence to support its position
- is generally organized and focused, demonstrating some coherence and progression of ideas
- exhibits adequate but inconsistent facility in the use of language, using generally appropriate vocabulary
- demonstrates some variety in sentence structure
- has some errors in grammar, usage, and mechanics

## SCORE OF 1

An essay in this category demonstrates *very little or no mastery*, and is severely flawed by ONE OR MORE of the following weaknesses:

- develops no viable point of view on the issue, or provides little or no evidence to support its position
- is disorganized or unfocused, resulting in a disjointed or incoherent essay
- displays fundamental errors in vocabulary
- demonstrates severe flaws in sentence structure
- contains pervasive errors in grammar, usage, or mechanics that persistently interfere with meaning

Essays not written on the essay assignment will receive a score of zero.

# Scoring Worksheet for Form Codes AEIA, BWIA

From your responses on your QAS report, fill in the blanks below and do the calculations to get your critical reading, mathematics and writing raw scores. Use the tables on the following pages to find your scaled scores.

## Get Your Critical Reading Score

How many critical reading questions did you get **right**?

Section 2: Questions 1-23 \_\_\_\_\_

Section 4: Questions 1-24 + \_\_\_\_\_

Section 8: Questions 1-19 + \_\_\_\_\_

Total = \_\_\_\_\_ (A)

How many critical reading questions did you get **wrong**?

Section 2: Questions 1-23 \_\_\_\_\_

Section 4: Questions 1-24 + \_\_\_\_\_

Section 8: Questions 1-19 + \_\_\_\_\_

Total = \_\_\_\_\_

× 0.25 = \_\_\_\_\_ (B)

A - B = \_\_\_\_\_  
Critical Reading  
Raw Score

Round the critical reading raw score to the nearest whole number.

\_\_\_\_\_

Use the table on page 53 to find your critical reading scaled score.

\_\_\_\_\_

## Get Your Mathematics Score

How many mathematics questions did you get **right**?

Section 3: Questions 1-20 \_\_\_\_\_

Section 7: Questions 1-18 + \_\_\_\_\_

Section 9: Questions 1-16 + \_\_\_\_\_

Total = \_\_\_\_\_ (A)

How many **multiple-choice** mathematics questions did you get **wrong**?

Section 3: Questions 1-20 \_\_\_\_\_

Section 7: Questions 1-18 + \_\_\_\_\_

Section 9: Questions 1-16 + \_\_\_\_\_

Total = \_\_\_\_\_

× 0.25 = \_\_\_\_\_ (B)

A - B = \_\_\_\_\_  
Mathematics Raw Score

Round the mathematics raw score to the nearest whole number.

\_\_\_\_\_

Use the table on page 53 to find your mathematics scaled score.

\_\_\_\_\_

## Get Your Writing Score

How many multiple-choice writing questions did you get **right**?

Section 6: Questions 1-35 \_\_\_\_\_

Section 10: Questions 1-14 + \_\_\_\_\_

Total = \_\_\_\_\_ (A)

How many multiple-choice writing questions did you get **wrong**?

Section 6: Questions 1-35 \_\_\_\_\_

Section 10: Questions 1-14 + \_\_\_\_\_

Total = \_\_\_\_\_

× 0.25 = \_\_\_\_\_ (B)

A - B = \_\_\_\_\_  
Writing Multiple-Choice  
Raw Score

Round the writing multiple-choice raw score to the nearest whole number.

\_\_\_\_\_ (C)

Use the table on page 53 to find your writing multiple-choice scaled score.

\_\_\_\_\_

Copy your essay score from your QAS report.

\_\_\_\_\_ (D)

Use the appropriate writing composite table (pages 54-55) for your form code and look up your writing multiple-choice raw score (C) and your essay score (D) to find your writing composite scaled score.

\_\_\_\_\_

## SAT Score Conversion Table Form Codes AEIA, BWIA

| Raw Score | Critical Reading Scaled Score | Math Scaled Score | Writing Multiple-Choice Scaled Score | Raw Score    | Critical Reading Scaled Score | Math Scaled Score | Writing Multiple-Choice Scaled Score |
|-----------|-------------------------------|-------------------|--------------------------------------|--------------|-------------------------------|-------------------|--------------------------------------|
| 66        | 800                           |                   |                                      | 31           | 490                           | 540               | 54                                   |
| 65        | 800                           |                   |                                      | 30           | 480                           | 530               | 53                                   |
| 64        | 800                           |                   |                                      | 29           | 480                           | 520               | 52                                   |
| 63        | 780                           |                   |                                      | 28           | 470                           | 510               | 51                                   |
| 62        | 760                           |                   |                                      | 27           | 470                           | 510               | 50                                   |
| 61        | 750                           |                   |                                      | 26           | 460                           | 500               | 49                                   |
| 60        | 730                           |                   |                                      | 25           | 450                           | 490               | 48                                   |
| 59        | 720                           |                   |                                      | 24           | 450                           | 480               | 47                                   |
| 58        | 700                           |                   |                                      | 23           | 440                           | 470               | 46                                   |
| 57        | 690                           |                   |                                      | 22           | 430                           | 460               | 45                                   |
| 56        | 680                           |                   |                                      | 21           | 430                           | 460               | 44                                   |
| 55        | 670                           |                   |                                      | 20           | 420                           | 450               | 44                                   |
| 54        | 660                           | 800               |                                      | 19           | 410                           | 440               | 43                                   |
| 53        | 650                           | 760               |                                      | 18           | 410                           | 430               | 42                                   |
| 52        | 640                           | 740               |                                      | 17           | 400                           | 420               | 41                                   |
| 51        | 630                           | 720               |                                      | 16           | 390                           | 410               | 40                                   |
| 50        | 620                           | 710               |                                      | 15           | 390                           | 400               | 39                                   |
| 49        | 610                           | 700               | 80                                   | 14           | 380                           | 390               | 38                                   |
| 48        | 610                           | 690               | 78                                   | 13           | 370                           | 380               | 37                                   |
| 47        | 600                           | 680               | 75                                   | 12           | 370                           | 370               | 36                                   |
| 46        | 590                           | 670               | 72                                   | 11           | 360                           | 360               | 35                                   |
| 45        | 580                           | 660               | 70                                   | 10           | 350                           | 350               | 35                                   |
| 44        | 580                           | 650               | 69                                   | 9            | 340                           | 340               | 34                                   |
| 43        | 570                           | 640               | 67                                   | 8            | 330                           | 330               | 33                                   |
| 42        | 560                           | 640               | 66                                   | 7            | 320                           | 320               | 31                                   |
| 41        | 560                           | 630               | 64                                   | 6            | 310                           | 310               | 30                                   |
| 40        | 550                           | 620               | 63                                   | 5            | 300                           | 300               | 29                                   |
| 39        | 540                           | 610               | 62                                   | 4            | 290                           | 280               | 28                                   |
| 38        | 540                           | 600               | 61                                   | 3            | 280                           | 270               | 26                                   |
| 37        | 530                           | 590               | 60                                   | 2            | 260                           | 250               | 24                                   |
| 36        | 520                           | 580               | 59                                   | 1            | 250                           | 240               | 22                                   |
| 35        | 520                           | 570               | 58                                   | 0            | 230                           | 220               | 20                                   |
| 34        | 510                           | 570               | 57                                   | -1           | 210                           | 200               | 20                                   |
| 33        | 500                           | 560               | 56                                   | -2           | 200                           | 200               | 20                                   |
| 32        | 500                           | 550               | 55                                   | and<br>below |                               |                   |                                      |

This table is for use only with the test in this booklet.

## SAT Writing Composite Score Conversion Table Form Code AEIA

| Writing MC<br>Raw Score | Essay Raw Score |     |     |     |     |     |     |     |     |     |     |     |
|-------------------------|-----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|                         | 12              | 11  | 10  | 9   | 8   | 7   | 6   | 5   | 4   | 3   | 2   | 0   |
| 49                      | 800             | 800 | 800 | 800 | 780 | 750 | 740 | 720 | 710 | 690 | 670 | 670 |
| 48                      | 800             | 800 | 790 | 780 | 740 | 720 | 700 | 690 | 670 | 660 | 640 | 640 |
| 47                      | 800             | 790 | 760 | 750 | 720 | 690 | 680 | 660 | 650 | 630 | 610 | 610 |
| 46                      | 780             | 770 | 740 | 730 | 700 | 670 | 660 | 640 | 630 | 610 | 600 | 600 |
| 45                      | 760             | 750 | 730 | 710 | 680 | 660 | 640 | 620 | 610 | 590 | 580 | 580 |
| 44                      | 750             | 740 | 710 | 700 | 670 | 640 | 630 | 610 | 600 | 580 | 560 | 560 |
| 43                      | 740             | 730 | 700 | 690 | 650 | 630 | 610 | 600 | 580 | 570 | 550 | 550 |
| 42                      | 730             | 710 | 690 | 670 | 640 | 620 | 600 | 580 | 570 | 560 | 540 | 540 |
| 41                      | 710             | 700 | 680 | 660 | 630 | 610 | 590 | 570 | 560 | 540 | 530 | 530 |
| 40                      | 700             | 690 | 670 | 650 | 620 | 600 | 580 | 560 | 550 | 530 | 520 | 520 |
| 39                      | 690             | 680 | 660 | 640 | 610 | 590 | 570 | 550 | 540 | 520 | 510 | 510 |
| 38                      | 680             | 670 | 650 | 630 | 600 | 580 | 560 | 540 | 530 | 520 | 500 | 500 |
| 37                      | 680             | 660 | 640 | 620 | 590 | 570 | 550 | 530 | 520 | 510 | 490 | 490 |
| 36                      | 670             | 660 | 630 | 620 | 580 | 560 | 540 | 530 | 510 | 500 | 480 | 480 |
| 35                      | 660             | 650 | 620 | 610 | 570 | 550 | 530 | 520 | 510 | 490 | 470 | 470 |
| 34                      | 650             | 640 | 610 | 600 | 570 | 540 | 530 | 510 | 500 | 480 | 460 | 460 |
| 33                      | 640             | 630 | 610 | 590 | 560 | 530 | 520 | 500 | 490 | 470 | 460 | 460 |
| 32                      | 630             | 620 | 600 | 580 | 550 | 530 | 510 | 490 | 480 | 460 | 450 | 450 |
| 31                      | 630             | 610 | 590 | 570 | 540 | 520 | 500 | 480 | 470 | 460 | 440 | 440 |
| 30                      | 620             | 610 | 580 | 570 | 530 | 510 | 490 | 480 | 470 | 450 | 430 | 430 |
| 29                      | 610             | 600 | 570 | 560 | 530 | 500 | 490 | 470 | 460 | 440 | 420 | 420 |
| 28                      | 600             | 590 | 570 | 550 | 520 | 490 | 480 | 460 | 450 | 430 | 420 | 420 |
| 27                      | 590             | 580 | 560 | 540 | 510 | 490 | 470 | 450 | 440 | 420 | 410 | 410 |
| 26                      | 590             | 570 | 550 | 530 | 500 | 480 | 460 | 440 | 430 | 420 | 400 | 400 |
| 25                      | 580             | 570 | 540 | 530 | 490 | 470 | 450 | 440 | 430 | 410 | 390 | 390 |
| 24                      | 570             | 560 | 530 | 520 | 490 | 460 | 450 | 430 | 420 | 400 | 380 | 380 |
| 23                      | 560             | 550 | 530 | 510 | 480 | 450 | 440 | 420 | 410 | 390 | 380 | 380 |
| 22                      | 550             | 540 | 520 | 500 | 470 | 450 | 430 | 410 | 400 | 380 | 370 | 370 |
| 21                      | 550             | 530 | 510 | 500 | 460 | 440 | 420 | 410 | 390 | 380 | 360 | 360 |
| 20                      | 540             | 530 | 500 | 490 | 450 | 430 | 410 | 400 | 390 | 370 | 350 | 350 |
| 19                      | 530             | 520 | 500 | 480 | 450 | 420 | 410 | 390 | 380 | 360 | 350 | 350 |
| 18                      | 520             | 510 | 490 | 470 | 440 | 420 | 400 | 380 | 370 | 350 | 340 | 340 |
| 17                      | 520             | 500 | 480 | 460 | 430 | 410 | 390 | 370 | 360 | 350 | 330 | 330 |
| 16                      | 510             | 500 | 470 | 460 | 420 | 400 | 380 | 370 | 360 | 340 | 320 | 320 |
| 15                      | 500             | 490 | 470 | 450 | 420 | 390 | 380 | 360 | 350 | 330 | 320 | 320 |
| 14                      | 490             | 480 | 460 | 440 | 410 | 390 | 370 | 350 | 340 | 320 | 310 | 310 |
| 13                      | 490             | 470 | 450 | 430 | 400 | 380 | 360 | 340 | 330 | 320 | 300 | 300 |
| 12                      | 480             | 470 | 440 | 430 | 390 | 370 | 350 | 340 | 330 | 310 | 290 | 290 |
| 11                      | 470             | 460 | 430 | 420 | 390 | 360 | 350 | 330 | 320 | 300 | 290 | 290 |
| 10                      | 460             | 450 | 430 | 410 | 380 | 350 | 340 | 320 | 310 | 290 | 280 | 280 |
| 9                       | 450             | 440 | 420 | 400 | 370 | 350 | 330 | 310 | 300 | 280 | 270 | 270 |
| 8                       | 450             | 430 | 410 | 390 | 360 | 340 | 320 | 300 | 290 | 280 | 260 | 260 |
| 7                       | 440             | 420 | 400 | 390 | 350 | 330 | 310 | 300 | 280 | 270 | 250 | 250 |
| 6                       | 430             | 410 | 390 | 380 | 340 | 320 | 300 | 290 | 270 | 260 | 240 | 240 |
| 5                       | 420             | 400 | 380 | 360 | 330 | 310 | 290 | 270 | 260 | 250 | 230 | 230 |
| 4                       | 400             | 390 | 370 | 350 | 320 | 300 | 280 | 260 | 250 | 230 | 220 | 220 |
| 3                       | 390             | 380 | 350 | 340 | 310 | 280 | 270 | 250 | 240 | 220 | 200 | 200 |
| 2                       | 370             | 360 | 340 | 320 | 290 | 270 | 250 | 230 | 220 | 200 | 200 | 200 |
| 1                       | 360             | 350 | 320 | 310 | 270 | 250 | 230 | 220 | 200 | 200 | 200 | 200 |
| 0                       | 340             | 330 | 300 | 290 | 250 | 230 | 210 | 200 | 200 | 200 | 200 | 200 |
| -1<br>and below         | 320             | 300 | 280 | 260 | 230 | 210 | 200 | 200 | 200 | 200 | 200 | 200 |

This table is for use only with the test in this booklet.

## SAT Writing Composite Score Conversion Table Form Code BWIA

| Writing MC<br>Raw Score | Essay Raw Score |     |     |     |     |     |     |     |     |     |     |     |
|-------------------------|-----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|                         | 12              | 11  | 10  | 9   | 8   | 7   | 6   | 5   | 4   | 3   | 2   | 0   |
| 49                      | 800             | 800 | 800 | 800 | 780 | 750 | 740 | 720 | 710 | 700 | 680 | 670 |
| 48                      | 800             | 800 | 790 | 780 | 750 | 720 | 700 | 690 | 680 | 670 | 650 | 640 |
| 47                      | 800             | 790 | 760 | 750 | 720 | 690 | 680 | 660 | 650 | 640 | 620 | 610 |
| 46                      | 780             | 770 | 740 | 730 | 700 | 670 | 660 | 640 | 630 | 620 | 600 | 590 |
| 45                      | 760             | 750 | 730 | 710 | 680 | 660 | 640 | 630 | 620 | 600 | 590 | 580 |
| 44                      | 750             | 740 | 710 | 700 | 670 | 640 | 630 | 610 | 600 | 590 | 570 | 560 |
| 43                      | 740             | 730 | 700 | 690 | 660 | 630 | 610 | 600 | 590 | 580 | 560 | 550 |
| 42                      | 720             | 710 | 690 | 670 | 640 | 620 | 600 | 590 | 580 | 560 | 550 | 540 |
| 41                      | 710             | 700 | 680 | 660 | 630 | 610 | 590 | 580 | 570 | 550 | 540 | 530 |
| 40                      | 700             | 690 | 670 | 650 | 620 | 600 | 580 | 570 | 560 | 540 | 530 | 520 |
| 39                      | 690             | 680 | 660 | 640 | 610 | 590 | 570 | 560 | 550 | 530 | 520 | 510 |
| 38                      | 680             | 670 | 650 | 630 | 600 | 580 | 560 | 550 | 540 | 520 | 510 | 500 |
| 37                      | 680             | 660 | 640 | 630 | 590 | 570 | 550 | 540 | 530 | 510 | 500 | 490 |
| 36                      | 670             | 660 | 630 | 620 | 590 | 560 | 550 | 530 | 520 | 510 | 490 | 480 |
| 35                      | 660             | 650 | 620 | 610 | 580 | 550 | 540 | 520 | 510 | 500 | 480 | 470 |
| 34                      | 650             | 640 | 610 | 600 | 570 | 540 | 530 | 510 | 500 | 490 | 470 | 460 |
| 33                      | 640             | 630 | 610 | 590 | 560 | 540 | 520 | 500 | 500 | 480 | 460 | 460 |
| 32                      | 630             | 620 | 600 | 580 | 550 | 530 | 510 | 500 | 490 | 470 | 460 | 450 |
| 31                      | 630             | 610 | 590 | 580 | 540 | 520 | 500 | 490 | 480 | 460 | 450 | 440 |
| 30                      | 620             | 610 | 580 | 570 | 540 | 510 | 500 | 480 | 470 | 460 | 440 | 430 |
| 29                      | 610             | 600 | 570 | 560 | 530 | 500 | 490 | 470 | 460 | 450 | 430 | 420 |
| 28                      | 600             | 590 | 570 | 550 | 520 | 500 | 480 | 460 | 460 | 440 | 420 | 420 |
| 27                      | 590             | 580 | 560 | 540 | 510 | 490 | 470 | 460 | 450 | 430 | 420 | 410 |
| 26                      | 590             | 570 | 550 | 540 | 500 | 480 | 460 | 450 | 440 | 430 | 410 | 400 |
| 25                      | 580             | 570 | 540 | 530 | 500 | 470 | 460 | 440 | 430 | 420 | 400 | 390 |
| 24                      | 570             | 560 | 530 | 520 | 490 | 460 | 450 | 430 | 420 | 410 | 390 | 380 |
| 23                      | 560             | 550 | 530 | 510 | 480 | 460 | 440 | 420 | 420 | 400 | 380 | 380 |
| 22                      | 550             | 540 | 520 | 500 | 470 | 450 | 430 | 420 | 410 | 390 | 380 | 370 |
| 21                      | 550             | 530 | 510 | 500 | 470 | 440 | 420 | 410 | 400 | 390 | 370 | 360 |
| 20                      | 540             | 530 | 500 | 490 | 460 | 430 | 420 | 400 | 390 | 380 | 360 | 350 |
| 19                      | 530             | 520 | 500 | 480 | 450 | 430 | 410 | 390 | 380 | 370 | 350 | 350 |
| 18                      | 520             | 510 | 490 | 470 | 440 | 420 | 400 | 390 | 380 | 360 | 350 | 340 |
| 17                      | 520             | 500 | 480 | 470 | 430 | 410 | 390 | 380 | 370 | 360 | 340 | 330 |
| 16                      | 510             | 500 | 470 | 460 | 430 | 400 | 390 | 370 | 360 | 350 | 330 | 320 |
| 15                      | 500             | 490 | 470 | 450 | 420 | 400 | 380 | 360 | 350 | 340 | 320 | 310 |
| 14                      | 490             | 480 | 460 | 440 | 410 | 390 | 370 | 360 | 350 | 330 | 320 | 310 |
| 13                      | 490             | 470 | 450 | 440 | 400 | 380 | 360 | 350 | 340 | 330 | 310 | 300 |
| 12                      | 480             | 470 | 440 | 430 | 400 | 370 | 360 | 340 | 330 | 320 | 300 | 290 |
| 11                      | 470             | 460 | 440 | 420 | 390 | 370 | 350 | 330 | 320 | 310 | 290 | 280 |
| 10                      | 460             | 450 | 430 | 410 | 380 | 360 | 340 | 320 | 320 | 300 | 280 | 280 |
| 9                       | 450             | 440 | 420 | 400 | 370 | 350 | 330 | 320 | 310 | 290 | 280 | 270 |
| 8                       | 450             | 430 | 410 | 400 | 360 | 340 | 320 | 310 | 300 | 280 | 270 | 260 |
| 7                       | 440             | 420 | 400 | 390 | 360 | 330 | 310 | 300 | 290 | 280 | 260 | 250 |
| 6                       | 430             | 410 | 390 | 380 | 350 | 320 | 300 | 290 | 280 | 270 | 250 | 240 |
| 5                       | 410             | 400 | 380 | 370 | 330 | 310 | 290 | 280 | 270 | 250 | 240 | 230 |
| 4                       | 400             | 390 | 370 | 350 | 320 | 300 | 280 | 270 | 260 | 240 | 230 | 220 |
| 3                       | 390             | 380 | 350 | 340 | 310 | 280 | 270 | 250 | 240 | 230 | 210 | 200 |
| 2                       | 370             | 360 | 340 | 320 | 290 | 270 | 250 | 240 | 230 | 210 | 200 | 200 |
| 1                       | 360             | 350 | 320 | 310 | 280 | 250 | 230 | 220 | 210 | 200 | 200 | 200 |
| 0                       | 340             | 330 | 300 | 290 | 260 | 230 | 220 | 200 | 200 | 200 | 200 | 200 |
| -1                      | 310             | 300 | 280 | 270 | 230 | 210 | 200 | 200 | 200 | 200 | 200 | 200 |
| -2                      | 310             | 300 | 280 | 260 | 230 | 210 | 200 | 200 | 200 | 200 | 200 | 200 |
| and below               |                 |     |     |     |     |     |     |     |     |     |     |     |

This table is for use only with the test in this booklet.





# Practice Sheet for Essay

A large rectangular box with a black border, containing 25 horizontal lines for writing. The lines are evenly spaced and extend across the width of the box, providing a template for an essay.