

ESSAY

Reading

To make the best use of your Question-and-Answer Service (QAS) Report, follow these steps:

The SAT®

Question-and-Answer Service

October 2013 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

NOT FOR REPRODUCTION AND RESALE.

© 2013 The College Board. College Board, achieve more, SAT and the acorn logo are registered trademarks of the College Board. SAT Skills Insight, The Official SAT Online Course, The Official SAT Question of the Day and The Official SAT Study Guide are trademarks owned by the College Board.

achieve
more

SAT®



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 scores for the entire test may be canceled.**
- **An electronic copy of your essay will be made available to each of your designated score recipients: colleges, universities, and scholarship programs.**

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 think that contentment—being happy with the way things are—is the perfect state of affairs. After all, what could be better than being so satisfied with how things are that you don't want anything else? But contentment has disadvantages: if we are content with the way things are, we are not motivated to change things, to improve ourselves, or to do better. We must therefore always choose between being content and pushing ourselves to do better.

Assignment: Does being content with the way things are prevent people from improving themselves and doing better? 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.
Do not turn to any other section in the test.



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 scores for the entire test may be canceled.
- An electronic copy of your essay will be made available to each of your designated score recipients: colleges, universities, and scholarship programs.

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.

Privacy was once valued and protected. Diaries came with locks to keep the writer's privately recorded thoughts from being read by others. Public telephones were enclosed in booths so that conversations would not be overheard. But now people feel free to post information about themselves on social networking Web sites and carry on cell phone conversations in public places. We would be much better off if we valued privacy—our own and that of others—far more highly than we do.

Assignment: Do we place too little value on privacy? 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.
Do not turn to any other section in the test.



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 scores for the entire test may be canceled.**
- **An electronic copy of your essay will be made available to each of your designated score recipients: colleges, universities, and scholarship programs.**

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.

Nobody wants to be called old-fashioned or be considered out of touch with current trends and thinking. But there's something to be said for holding on to old ideas and customs, even if they may not be in fashion at the moment. People are too easily impressed by anything new and trendy—the latest television show, or music group, or technological gadget. They place too much emphasis on newness without bothering to look at something's real value.

Assignment: Do people place too much value on newness? 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.
Do not turn to any other section in the test.

1 ESSAY

Unauthorized copying or reuse of
any part of this page is illegal.

ESSAY 1

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 scores for the entire test may be canceled.**
- **An electronic copy of your essay will be made available to each of your designated score recipients: colleges, universities, and scholarship programs.**

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

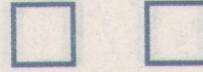
Think carefully about the issue presented in the following excerpt and the assignment below.

Everything a public figure or celebrity says or does is likely to turn up on an Internet site or a television show. The great appeal of these sites and shows is that they help us learn as much as possible about public figures. The more we know about political candidates, for example, the more informed we are as voters. Much of the information, however, is irrelevant and actually prevents us from focusing on the issues that matter.

Assignment: Does having too much information about public figures distract us from the important issues? 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.
Do not turn to any other section in the test.

**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 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

Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ

1. Architect Toyo Ito strives to design spaces that seem “aqueous,” creating environments wherein objects appear to -----.

- (A) fly
- (B) float
- (C) shrink
- (D) smolder
- (E) collide

2. Although it is often difficult to ----- someone as charming as Hank, his colleagues can no longer overlook his -----.

- (A) dislike . . achievements
- (B) criticize . . indiscretions
- (C) tolerate . . offenses
- (D) admire . . obligations
- (E) excuse . . resolutions

3. The scrapbooks compiled by artist and historian William Dorsey are so ----- that they constitute ----- view of Philadelphia’s African American community between 1873 and 1903.

- (A) inventive . . a constricted
- (B) extensive . . a comprehensive
- (C) authentic . . an imaginative
- (D) compelling . . an inconsequential
- (E) prosaic . . a vibrant

4. Patricia is so ----- that she is unable to tolerate others deviating in the least from rules and conventions.

- (A) importunate
- (B) facile
- (C) unshakable
- (D) punctilious
- (E) complaisant

5. Unlike Colin, whose ----- for dramatic presentation captivated his audiences, Nick was not ----- speaker.

- (A) flair . . a temperate
- (B) contempt . . a charismatic
- (C) penchant . . an unskilled
- (D) faculty . . an engaging
- (E) antipathy . . an incisive

6. Although Elayne helped to ----- the defendant by supporting his alibi, she unwittingly ----- herself with her testimony.

- (A) chastise . . disparaged
- (B) admonish . . entangled
- (C) exonerate . . implicated
- (D) denounce . . incriminated
- (E) acquit . . absolved

7. Stewart O’Nan’s novels are aptly described as -----; each is noticeably unlike its predecessor in style, tone, and narrative approach.

- (A) disparate
- (B) preeminent
- (C) strident
- (D) fulsome
- (E) prescient

8. The picture book *Red Sings from Treetops* ----- the changing seasons, with whimsical illustrations that ----- the colors, sounds, and tastes associated with different times of the year.

- (A) perpetuates . . praise
- (B) provokes . . detail
- (C) celebrates . . castigate
- (D) inauguates . . belie
- (E) evokes . . epitomize



Unauthorized copying or reuse of
any part of this page is illegal.



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 9-12 are based on the following passages.

Passage 1

For those of us who wish to preserve the planet's diversity of species, high-tech, chemically assisted agriculture is an environmentalist's best friend.

- Line 5 That's right. Soaring growth in human population threatens to destroy most of the world's remaining rain forests, wetlands, and mountain ecosystems, drastically reducing species diversity. Despite advances in chemical-free farming techniques, overreliance on these practices will result in the 10 plowing down of forests to feed a global population that is estimated to double by 2050. Environmentalists must face the fact that unless high-yield crop varieties, pesticides, and fertilizers are widely used in developing nations, the world's food supply will be outstripped 15 by spiraling demand. This will mean *more* forests falling under the plow.

Passage 2

I couldn't agree more that it's crucial to step up agricultural productivity to feed a spiraling global population. My quarrel is with *how* to intensify agriculture, not *whether* it should be intensified. The paramount concern must be to increase crop yields in environmentally sensitive ways that protect human health and the soil and water that are agriculture's very foundation. Heavy use of agrochemicals can bring high 20 yields in the short run, but the cumulative damages may be considerable. Those of us whose research demonstrates that resource-conserving farming practices can be just as productive as the chemical-intensive kind contend that the goal should be *efficient* use of chemicals, not *wide* use.

Passage 2 used by permission of Paul Faeth, Senior Fellow, CNA.

9. Both authors indicate that meeting the world's food needs should not come at the expense of

- (A) innovative farming practices
- (B) environmental integrity
- (C) humane treatment of animals
- (D) food that actually tastes good
- (E) economic development

10. The author of Passage 2 would most likely respond to the statement in lines 11-15, Passage 1 ("Environmentalists . . . demand"), by arguing that

- (A) industrialized nations pose a greater threat to the environment than do developing nations
- (B) market forces may help the world's food supply to grow in proportion to demand
- (C) many fertilizers are organic substances that produce no ill effects in humans
- (D) agricultural chemicals can be used on a small scale and still significantly improve crop yields
- (E) the use of pesticides is unnecessary if high-yield crop varieties are adopted

11. Which best describes the overall relationship between the two passages?

- (A) Passage 1 expresses concern about a situation, while Passage 2 contends that the situation is not so dire.
- (B) Passage 1 presents research findings to support an argument, while Passage 2 challenges some of those findings.
- (C) Passage 1 focuses on the long-term effects of a policy, while Passage 2 concentrates on the short-term effects.
- (D) Passage 1 disputes a position, while Passage 2 provides a historical justification for that position.
- (E) Passage 1 presents a solution to a problem, while Passage 2 argues for a modified version of that solution.

12. The authors of both passages would most likely agree that

- (A) developing nations depend on chemical-intensive farming techniques
- (B) chemical-assisted agriculture increases crop yields significantly
- (C) the heavy use of agrochemicals ultimately protects the environment
- (D) banning chemical pesticides will enhance species diversity on the planet
- (E) high-tech solutions are less effective than traditional farming practices



Unauthorized copying or reuse of
any part of this page is illegal.



Questions 13-24 are based on the following passage.

Marguerite describes the time, as a child in the 1930s, that she carried groceries home for Mrs. Flowers, a neighbor in their African American community.

She said, without turning her head, to me, "I hear you're doing very good school work, Marguerite, but that it's all written. The teachers report that they have trouble getting you to talk in class." We passed the triangular farm on our left and the path widened to allow us to walk together. I hung back in the separate unasked and unanswered questions.

Line 5 "Come and walk along with me, Marguerite." I couldn't have refused even if I wanted to. She pronounced my name so nicely. Or more correctly, she spoke each word with such clarity that I was certain a foreigner who didn't understand English could have understood her.

10 "Now no one is going to make you talk—possibly no one can. But bear in mind, language is man's way of communicating with his fellow man and it is language alone which separates him from the lower animals." That was a totally new idea to me, and I would need time to think about it.

15 "Your grandmother says you read a lot. Every chance you get. That's good, but not good enough. Words mean more than what is set down on paper. It takes the human voice to infuse them with the shades of deeper meaning."

20 I memorized the part about the human voice infusing words. It seemed so valid and poetic.

25 She said she was going to give me some books and that I not only must read them, I must read them aloud. She suggested that I try to make a sentence sound in as many different ways as possible.

30 "I'll accept no excuse if you return a book to me that has been badly handled." My imagination boggled at the punishment I would deserve if in fact I did abuse a book of Mrs. Flowers'. Death would be too kind and brief.

35 The odors in the house surprised me. Somehow I had never connected Mrs. Flowers with food or eating or any other common experience of common people. There must have been an outhouse, too, but my mind never recorded it.

40 The sweet scent of vanilla had met us as she opened the door.

45 "I made tea cookies this morning. You see, I had planned to invite you for cookies and lemonade so we could have this little chat. The lemonade is in the icebox."

It followed that Mrs. Flowers would have ice on an ordinary day, when most families in our town bought ice late on Saturdays only a few times during the summer to be used in the wooden ice-cream freezers.

She took the bags from me and disappeared through the kitchen door. I looked around the room that I had never in my wildest fantasies imagined I would see. Browned

photographs leered or threatened from the walls and the white, freshly done curtains pushed against themselves and against the wind. I wanted to gobble up the room entire and take it to Bailey*, who would help me analyze and enjoy it.

50 "Have a seat, Marguerite. Over there by the table." She carried a platter covered with a tea towel. Although she warned that she hadn't tried her hand at baking sweets for some time, I was certain that like everything else about her the cookies would be perfect.

55 They were flat round wafers, slightly browned on the edges and butter-yellow in the center. With the cold lemonade they were sufficient for childhood's lifelong diet. Remembering my manners, I took nice little lady-like bites off the edges. She said she had made them expressly for me and that she had a few in the kitchen that I could take home to my brother. So I jammed one whole cake in my mouth and the rough crumbs scratched the insides of my jaws, and if I hadn't had to swallow, it would have been a dream come true.

60 As I ate she began the first of what we later called "my lessons in living." She said that I must always be intolerant of ignorance but understanding of illiteracy. That some people, unable to go to school, were more educated and even more intelligent than college professors. She encouraged me to listen carefully to what country people called mother wit. That in those homely sayings was couched the collective wisdom of generations.

65 When I finished the cookies she brushed off the table and brought a thick, small book from the bookcase. I had read *A Tale of Two Cities* and found it up to my standards as a romantic novel. She opened the first page and I heard poetry for the first time in my life.

70 "It was the best of times and the worst of times . . ." Her voice slid in and curved down through and over the words. She was nearly singing. I wanted to look at the pages. Were they the same that I had read? Or were there notes, music, 75 lined on the pages, as in a hymn book?

* Marguerite's brother

13. The passage as a whole describes

- (A) a significant encounter
- (B) a humorous incident
- (C) a favorite pastime
- (D) an adventure story
- (E) an unanticipated reunion



Unauthorized copying or reuse of
any part of this page is illegal.



- 14.** Lines 8-12 ("Come . . . her") emphasize that Marguerite views Mrs. Flowers as
- very bossy
 - a close friend
 - a harsh critic
 - a demanding instructor
 - an admirable figure
- 15.** Lines 16-18 ("That . . . it") provide evidence that Marguerite is
- contemplative
 - sorrowful
 - sarcastic
 - impulsive
 - playful
- 16.** What does Mrs. Flowers do in lines 25-26 ("She . . . aloud")?
- She issues a warning.
 - She accepts a concession.
 - She makes a stipulation.
 - She anticipates an objection.
 - She offers a compromise.
- 17.** In line 30, "handled" most nearly means
- lifted
 - supervised
 - represented
 - treated
 - conducted
- 18.** Marguerite emphasizes her point in line 32 ("Death . . . brief") by use of
- emotional appeal
 - exaggeration
 - satire
 - inference
 - hypothetical reasoning
- 19.** The passage indicates that, for most people in Marguerite's town, having ice "on an ordinary day" (lines 42-43) is
- impossible
 - unusual
 - undesirable
 - inappropriate
 - invaluable
- 20.** The statement in lines 51-52 ("I wanted . . . it") primarily suggests that Marguerite
- is hungrier than she had realized
 - recognizes some of Mrs. Flowers' photographs
 - relishes the novelty of her experience
 - wishes she were at home with Bailey
 - aspires to be like Mrs. Flowers
- 21.** Which best characterizes the shift in Marguerite's behavior in lines 61-67 ("Remembering . . . true")?
- Reluctance . . . avoidance
 - Distress . . . resolution
 - Hesitancy . . . decorum
 - Propriety . . . spontaneity
 - Indulgence . . . impulsiveness
- 22.** In line 74, "homely" most nearly means
- simple
 - ugly
 - domestic
 - secure
 - comfortable

2



Unauthorized copying or reuse of
any part of this page is illegal.



2

23. Which pair best represents Marguerite's opinion of *A Tale of Two Cities* before and after Mrs. Flowers' reading in lines 77-85 ("I had . . . book")?

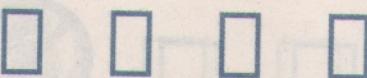
- (A) Poetic . . . musical
- (B) Satisfactory . . . scholarly
- (C) Romantic . . . dramatic
- (D) Mundane . . . extraordinary
- (E) Majestic . . . exquisite

24. For Marguerite, the visit with Mrs. Flowers is a

- (A) calamity
- (B) parody
- (C) mystery
- (D) diversion
- (E) revelation

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.

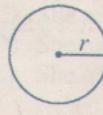
**SECTION 4**Time — 25 minutes
18 Questions**Turn to Section 4 (page 5) of your answer sheet to answer the questions in this section.**

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

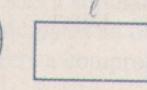
1. The use of a calculator is permitted.
2. All numbers used are real numbers.
3. Figures that accompany problems in this test are intended to provide information useful in solving the problems. They are drawn as accurately as possible EXCEPT when it is stated in a specific problem that the figure is not drawn to scale. All figures lie in a plane unless otherwise indicated.
4. 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

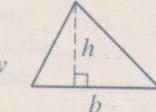


$$A = \pi r^2$$

$$C = 2\pi r$$



$$A = \ell w$$



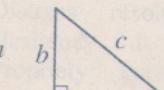
$$A = \frac{1}{2}bh$$



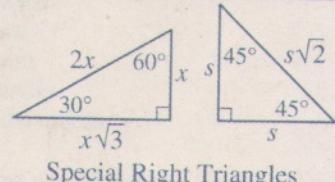
$$V = \ell wh$$



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



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



Special Right Triangles

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

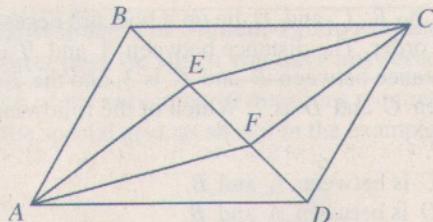
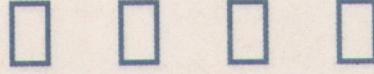
The sum of the measures in degrees of the angles of a triangle is 180.

$$xy = 12$$

1. Which of the following pairs (x, y) is a solution to the equation above?
 - (A) $(-3, 15)$
 - (B) $(-2, -6)$
 - (C) $(0, 12)$
 - (D) $(3, -4)$
 - (E) $(5, 7)$

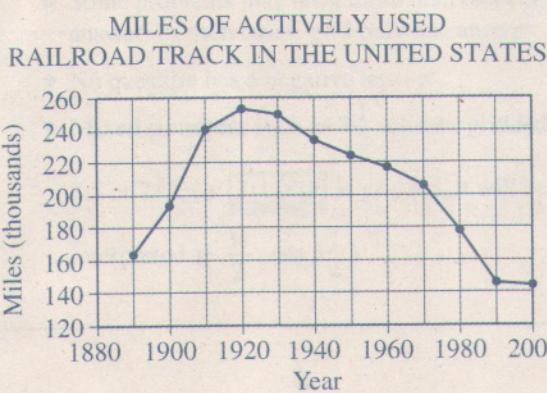
2. If x is an odd integer and y is an even integer, which of the following is an odd integer?
 - (A) $x + 2y$
 - (B) $2x + y$
 - (C) $2(x + y)$
 - (D) xy
 - (E) $2xy$

GO ON TO THE NEXT PAGE



3. In the figure above, $ABCD$ is a parallelogram and points E and F divide diagonal \overline{BD} into 3 parts of equal length. The area of quadrilateral $AECF$ is what fraction of the area of parallelogram $ABCD$?

(A) $\frac{1}{9}$
 (B) $\frac{1}{6}$
 (C) $\frac{1}{4}$
 (D) $\frac{1}{3}$
 (E) $\frac{1}{2}$



4. The line graph above shows the number of miles of actively used railroad track in the United States at ten-year intervals from 1890 to 2000. According to the graph, in what year did the number of miles of actively used railroad track differ the most from the number used in 1890?
- (A) 1910
 (B) 1920
 (C) 1930
 (D) 1990
 (E) 2000

x	y
2	c
8	d

5. The table above shows some values for x and y , where c and d are nonzero constants. If x is directly proportional to y , what is d in terms of c ?

(A) $4c$
 (B) $16c$
 (C) $\frac{4}{c}$
 (D) $\frac{16}{c}$
 (E) $\frac{c}{16}$

6. The equation of line ℓ is $y = \frac{3x}{a} + 5$, where a is a positive constant. If the value of a in this equation is doubled, then the resulting equation will represent a line whose slope is how many times the slope of line ℓ ?

(A) 2
 (B) $\frac{3}{2}$
 (C) 1
 (D) $\frac{1}{2}$
 (E) $\frac{3}{10}$

If the positive integer x is 1 more than a multiple of 8, then x is the square of an integer.

7. The statement above can be proven false by using which of the following values of x as a counterexample?

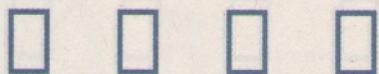
(A) 25
(B) 33
(C) 37
(D) 49
(E) 50

8. Points A , B , C , and D lie on a line, not necessarily in that order. The distance between A and B is 5, the distance between B and C is 3, and the distance between C and D is 7. Which of the following could be true?

 - I. C is between A and B .
 - II. D is between A and B .
 - III. A is between C and D .

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

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.

Grid in →
result.

7	/	1	2
0	0	0	0
1	1	1	1
2	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

Fraction line

Answer: 2.5

2	.	5
0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

Decimal point

Answer: 201
Either position is correct.

2	0	1
0	0	0
1	1	1
2	2	2
3	3	3
4	4	4

2	0	1
0	0	0
1	1	1
2	2	2
3	3	3
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 $\frac{7}{2}$. (If $\boxed{3}\boxed{1}\boxed{1}\boxed{2}$ is gridded, it will be interpreted as $\frac{31}{2}$, not $3\frac{1}{2}$.)

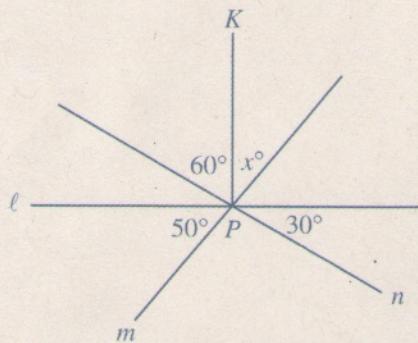
- **Decimal Answers:** If you obtain a decimal answer with more digits than the grid can accommodate, it may be either rounded or truncated, but it must fill the entire grid. For example, if you obtain an answer such as 0.6666..., you should record your result as .66 or .667. A less accurate value such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

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

2	/	3
0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6

.	6	6	6
0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6

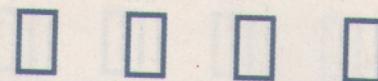
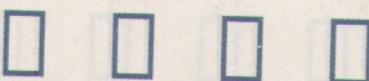
.	6	6	7
0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6



9. In the figure above, lines l , m , and n , and segment \overline{PK} intersect at point P . What is the value of x ?

10. Three more than twice z is 4. What is the value of z ?

GO ON TO THE NEXT PAGE



100, 310, 940, . . .

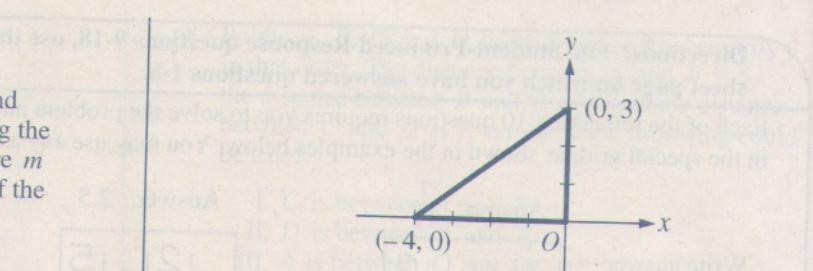
11. The first term of the sequence above is 100, and each term after the first is found by multiplying the preceding term by m and then adding k , where m and k are constants. What is the fourth term of the sequence?



Column 1: 100
Column 2: 310
Column 3: 940
Column 4: ?

Candidate Supported	Number of Voters
Ms. Barca	675
Mr. Marsh	585
Undecided	240
Total	1500

12. The table above shows the results of a preelection poll taken to determine the support of voters for two candidates. Ms. Barca would have needed the additional support of how many of the undecided voters to have had the support of exactly 51% of those polled?



13. What is the perimeter of the triangle in the xy -plane above?

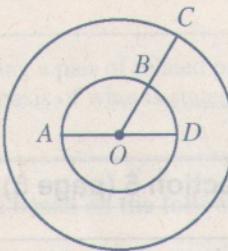


14. Harper Supply Store's profit of p dollars last week satisfies the inequality above, where \$725 is the store's average (arithmetic mean) weekly profit. If p is an integer, what is the greatest possible value of p ?

$$|p - 725| < 107$$



15. Let the function f be defined by $f(x) = \frac{1}{x}$. If $f(k) > 100$, what is one possible value of k ?



Note: Figure not drawn to scale.

16. A box contains cotton balls of uniform size and weight. If 63 of the cotton balls have a combined weight of 1.2 ounces, how many such cotton balls have a combined weight of 2 pounds?
(16 ounces = 1 pound)

17. In the figure above, the two circles have center O . If the length of segment \overline{AD} is 6 and the length of segment \overline{BC} is 5, what is the area of the larger circle divided by the area of the smaller circle?

$$\begin{array}{l} p^2 < 6 \\ \text{or} \\ r^2 < 12 \end{array}$$

18. If p and r are positive integers that satisfy the inequalities above, how many different values of $p + r$ are possible?

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.

5



5

Unauthorized copying or reuse of
any part of this page is illegal.

5



5

SECTION 5

Time — 25 minutes

24 Questions

Turn to Section 5 (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) (E)

1. Information about Abigail and John Adams is so ----- because of the wealth of letters the couple exchanged during John's frequent absences.
 (A) vague (B) agreeable (C) abundant
 (D) problematic (E) objective
2. In her movie *Chocolat*, filmmaker Claire Denis shuns ----- and attempts instead to depict events as realistically as possible.
 (A) probability (B) clarity (C) repetition
 (D) elation (E) artificiality

3. Although many companies ----- the idea of using solar power, the start-up costs are often too high to ----- the conversion from other technologies.

- (A) applaud . . justify
- (B) reject . . predict
- (C) understand . . ignore
- (D) resist . . finance
- (E) advertise . . duplicate

4. Many linguists believe that the human ability to learn language is -----, an essential part of our nature.

- (A) innate (B) intricate (C) theoretical
 (D) mysterious (E) fragmented

5. Thriving hub though it was, medieval Fustat probably presented a ----- kind of appearance; excavations there have revealed dwellings similar to unremarkable structures elsewhere in rural Egypt.

- (A) commodious (B) labyrinthine
 (C) vertiginous (D) blighted
 (E) quotidian



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 6-7 are based on the following passage.

Because of the rooted Spanish aristocratic prejudice against commerce and manual labor, the work of painters in the colonies of New Spain was not highly valued in the 1600s. Painting was considered an artisan activity, more physical than intellectual, much like that of tailors or blacksmiths. The persistence of guilds (trade associations), also inherited from Spain and maintaining their vitality overseas, contributed decisively to keeping such feudal beliefs about painting in force. However, the guilds and the workshop system they fostered also set the stage for the development of distinctive works of art determined by local rather than European conditions and specific to the various communities of the Hispanic American world.

6. The primary purpose of the passage is to

- (A) trace the history of guilds in New Spain
- (B) criticize the Spanish beliefs about manual labor
- (C) describe some particular works of art created in New Spain in the 1600s
- (D) compare feudalism in New Spain and in Europe
- (E) describe the influence of Spanish attitudes and practices on the painting of New Spain

7. The passage suggests that in New Spain in the 1600s, the work of a painter was generally regarded as most similar to that of a

- (A) musician
- (B) scientist
- (C) carpenter
- (D) poet
- (E) teacher

Questions 8-9 are based on the following passage.

He didn't think this had happened before. He had certainly woken up and not known where he was. Or what day it was. But his name . . . had he ever forgotten his name? John? Janos? No, but something like that. It was there, somewhere in the background, not only his name but everything. . . . Life and lifestyle and extenuating circumstances. Lying there waiting for him. Behind a thin membrane that would have to be pierced, something that had not woken up yet. But he was not really worried. He would know soon enough.

8. Which of the following is the character thinking about in lines 4-9 ("It was . . . yet")?

- (A) Information he is trying to recall
- (B) Experiences he would like to forget
- (C) An adventure he has undertaken
- (D) An escape he is planning
- (E) A fear he is facing

9. The character's attitude in the passage changes from

- (A) apprehension to defiance
- (B) haughtiness to resignation
- (C) certainty to dismay
- (D) disquiet to forbearance
- (E) incredulity to curiosity



Questions 10-15 are based on the following passage.

Can a person fully understand the distinctive qualities of the region he or she lives in? Here, a writer whose Anglo-American ancestors settled in the western United States reflects on his own efforts to understand.

The West is a region of extraordinary variety within its abiding unity, and of an iron immutability beneath its surface of change. The most splendid part of the American habitat, it is also the most fragile. Popular culture in the

Line 5 United States has misinterpreted and mistreated the West because the Anglo-Americans who came to the West from earlier frontiers, where conditions were not unlike those of northern Europe, found it different, daunting, exhilarating, dangerous, and unpredictable; they entered it carrying habits that were often inappropriate and expectations that were surely excessive. The dreams they brought to it were recognizable American dreams: a new chance, a little gray home in the West, adventure, danger, bonanza, total freedom from constraint and law and obligation. Those 10 dreams had often paid off in parts of America settled earlier, and they paid off for some in the West. For the majority, no. The West has had a way of warping well-carpentered habits, and raising the grain on exposed dreams.

20 I have lived in the West, many parts of it, for the best part of seventy-seven years. I have found stories and novels in it, have studied its history and written some of it, have tried to know its landscapes and understand its people, have loved and lamented it, and sometimes rejected its most 25 "western" opinions and prejudices, and pretty consistently despised its most powerful politicians and the general trend of their politics. I have been a lover but not much of a booster. Nevertheless, for better or worse, the West is, in my computer, the biggest part of my software.

30 If there is such a thing as being conditioned by climate and geography, and I think there is, it is the West that has conditioned me. It has the forms and lights and colors that I respond to in nature and in art. If there is a western speech within the English language, I speak it; if there is a single 35 western character or personality, I am some variant of it; if there is a single western culture in the small-c, anthropological sense, I have not escaped it. I may have even contributed to it in minor ways, for culture is a pyramid to which each of us brings a stone.

40 Therefore I ask your indulgence if I sometimes speak in terms of my personal experience, feelings and values, and put the anecdotal ahead of the statistical, and emphasize personal judgments and trial syntheses rather than the analysis that necessarily preceded them. In doing so, I shall be 45 trying to define myself as well as the traits of my native region.

10. The first sentence of the passage ("The West . . . change") suggests primarily that the western United States is a land of

(A) paradoxes
(B) misconceptions
(C) unfulfilled dreams
(D) breathtaking natural beauty
(E) abundant natural resources

11. In lines 4-11 ("Popular . . . excessive"), the author's attitude toward the views and actions of Anglo-Americans on the western frontier is one of

(A) deep-seated hostility
(B) mild disapproval
(C) limited curiosity
(D) cautious endorsement
(E) enthusiastic appreciation

12. In lines 17-19 ("The West . . . dreams"), the author uses figures of speech that usually describe wood in order to depict

(A) a spiritual existence
(B) new agricultural practices
(C) regional crafts
(D) the lifestyle of ranchers
(E) the effects of an experience

13. In lines 27-28 ("I . . . booster"), the author makes a distinction between

(A) romantic expectation and realistic assessment
(B) deep appreciation and active promotion
(C) fondness and hatred
(D) opposition and advocacy
(E) politics and campaigning



14. One difference between the second paragraph (lines 20-29) and the third paragraph (lines 30-39) is that only in the second paragraph does the author

- (A) refer to works of art that reflect natural characteristics of the West
- (B) indicate that he has contributed in some ways to the culture of the West
- (C) address aspects of the West that he very much dislikes
- (D) assert that the West has influenced his identity
- (E) mention anthropological distinctions between cultures

15. In the final paragraph (lines 40-46), the author shifts his focus primarily by

- (A) referring to other cultural traditions in the West
- (B) presenting a contrasting view of the West
- (C) raising questions that cannot be answered
- (D) addressing the reader directly
- (E) providing concrete examples



Questions 16-24 are based on the following passages.

These two passages discuss the phenomenon of honeybee decline, especially in the United States.

Passage 1 (2007)

Recent reports of catastrophic declines in bee populations have had scientists buzzing around looking for a plausible explanation. Is it mites? Is it genetically modified crops? Is it mobile phones or habitat loss? It's all of these things, says Pat Thomas, but it's also so much more than that.

Forget everything you thought you knew about the sedate and rarefied world of beekeeping. Bees are big business. In 2006, a Cornell University study found that in the United States of America, bees annually pollinate more than \$14 billion worth of seed and crops—mostly fruits, vegetables, and nuts. In the United Kingdom they are responsible for the pollination of around £200 million worth of food crops.

Bees' role in the natural order of our world is crucial and their importance as pollinators, both for agriculture and for wild plants, shouldn't be underestimated. Nor can it simply be quantified in monetary terms. Bees are what is known as a keystone species, ensuring the continued reproduction and survival not only of plants but other organisms that depend on those plants for survival. Once a keystone species disappears, other species begin to disappear too—thus Albert Einstein's apocalyptic and, these days, oft-quoted view: "If the bee disappeared off the surface of the globe, then man would only have four years of life left. No more bees, no more pollination, no more plants, no more animals, no more man."

This vision may be coming true. Our bees are dying. In record numbers. The recent disappearance of catastrophic numbers of bees from their colonies, in the USA especially but also in Europe, has been dubbed Colony Collapse Disorder (CCD). The most striking symptom of CCD is that the bees appear to die away from the hive. One day they fly away and never return. Those few that are left behind, say scientists, are very ill indeed. Virtually every known bee virus can be found in their bodies; some are carrying five or six viruses, as well as several fungal infections, at the same time.

Passage 2 (2009)

Starting in the autumn of 2006, beekeepers in several different states across the US began reporting unusually large losses in their bee colonies, ranging from 50 to 90 percent. These outbreaks, now known collectively as Colony Collapse Disorder, did not seem to be attributable to any specific cause of stress or disease. Since then, there has been a flurry of media stories filled with dramatic and dire predictions about how this phenomenon is bound to

devastate the nation's entire food supply, as honeybees are one of the major insects responsible for pollinating a variety of agricultural crops grown in the US. However the most commonly used crops, wheat and rice, do not depend on pollination by honeybees. There have also been comparisons of the honeybee colony losses to the proverbial canary in the coal mine, with some pundits arguing that the vanishing bees are a harbinger of a coming environmental disaster. However, a careful look at the real numbers behind the phenomenon shows that this so-called "crisis," as well as the commentary surrounding it, has been significantly exaggerated.

An Apiary Inspectors of America survey cited in a Congressional Research Service report revealed that during the winter of 2006-2007, beekeepers reported average losses of about 38 percent of their total colonies. Based on this study and various surveys, the report projected that the average beekeeper losses across the nation would reach a total of 30 percent in 2007. That's certainly not an ideal percentage, but it is hardly comparable to the highly exaggerated figures, some as high as 90 percent, that have been widely reported in the national media.

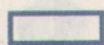
This figure [30 percent] is not a great increase to the normal risks of doing business as a beekeeper; a wide variety of hazards threaten bee populations, including pesticides, parasites, poor nutrition, viruses, and stress. It is worth noting as well that there is no conclusive test for CCD. Therefore, it is entirely possible that some percentages of bee losses that have been attributed to CCD are in fact due to other factors.

Passage 1: "Give Bees a Chance" by Pat Thomas, from *The Ecologist*, June 2007, Vol. 37, Issue 5, copyright © 2007 by *The Ecologist*. Used by permission.

Passage 2: "Counterpoint: Honeybee Colony Collapse Disorder is Not a Crisis" by M. Lee and Marcus Griswold, from *Points of View: Honey Bee Population 2009*, copyright by EBSCO Publishing. Used by permission of EBSCO Publishing.

16. Which best describes the relationship between the two passages?

- Passage 2 challenges the soundness of the scientific methodology mentioned in Passage 1.
- Passage 2 questions the severity of a phenomenon as it is presented in Passage 1.
- Passage 2 expands on the meaning of a term referenced in Passage 1.
- Passage 2 offers a solution to the problem discussed in Passage 1.
- Passage 2 cites scientific findings to corroborate the argument in Passage 1.

5**5**Unauthorized copying or reuse of
any part of this page is illegal.**5****5**

17. Pat Thomas (line 5) and the author of Passage 2 would agree on which point about the “declines in bee populations” (lines 1–2, Passage 1) ?
- (A) They are unlikely to have a negative influence on the economy.
(B) They have not been taken seriously by most scientists.
(C) They are probably a side effect of the use of technology.
(D) They may not be attributable to a single factor.
(E) They will likely have a devastating impact on the environment.
18. In line 15, “order” most nearly means
- (A) sect
(B) peace
(C) command
(D) commission
(E) functioning
19. The author of Passage 2 would most likely characterize Einstein’s “oft-quoted view” (lines 23–24, Passage 1) as
- (A) outdated
(B) overstated
(C) clichéd
(D) reasonable
(E) alarming
20. Those who wrote the “media stories” referred to in line 45, Passage 2, would most likely respond to the claims in lines 15–17, Passage 1 (“Bees’ . . . underestimated”), with
- (A) complete agreement
(B) tentative approval
(C) general indifference
(D) considerable skepticism
(E) strong objection

21. In line 46, “bound” most nearly means
- (A) certain
(B) obliged
(C) resolved
(D) confined
(E) secured
22. The sentences beginning with “However” in lines 49 and 55 both serve to
- (A) undermine claims
(B) introduce digressions
(C) substantiate generalities
(D) explain misconceptions
(E) note exclusions
23. The author of Passage 2 indicates that the list in line 72 (“pesticides . . . stress”) represents
- (A) threats that beekeepers do not fully understand
(B) problems that beekeepers must typically deal with
(C) dangers that may soon wipe out bee populations
(D) phenomena whose risks for bees are overstated
(E) direct consequences of Colony Collapse Disorder
24. The author of Passage 1 would most likely characterize the author’s perspective in Passage 2 as
- (A) ambiguous, as a result of the confusing numbers that are presented
(B) problematic, because it relies too heavily on unsupported personal opinion
(C) questionable, since evidence suggests a major decline in bee populations
(D) accurate, in that it provides empirical data from the Apiary Inspectors of America
(E) valid, given the contradictory nature of many recent studies of bee populations

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. The subtitle of Mary Shelley's gothic masterpiece *Frankenstein; or, The Modern Prometheus* refers to a mythical Greek character, he stole fire from the gods.

- (A) character, he stole
- (B) character who stole
- (C) character, who having stolen
- (D) character, whose stealing
- (E) character to have stolen

2. When the weather was nice, Lisa was more likely to walk than taking the bus because the route to her school took her through a beautiful park.

- (A) was more likely to walk than taking
- (B) was more likely to walk than to take
- (C) being more likely to walk instead of taking
- (D) is more likely walking than taking
- (E) is more likely to walk as take

3. Considered among the best in their fields, Dr. Johnson and Dr. Vasquez work as the personal physician to the president.

- (A) work as the personal physician
- (B) works as personal physician
- (C) work as personal physicians
- (D) working as the personal physicians
- (E) has worked as personal physician

4. Grammatically, Sanskrit, the language of classical literary and religious texts in India, it resembles other early Indo-European languages such as ancient Greek and Latin.

- (A) it resembles
- (B) it resembled
- (C) resembles
- (D) resembling
- (E) which resembled



5. In a typical restaurant kitchen, the chef ranks above the sous-chef, which is usually responsible for supervising the line cooks, who do the actual cooking.
- which is usually responsible for supervising
 - which is usually responsible to supervise
 - whose usual responsibility is they supervise
 - who is usually responsible to supervise
 - who is usually responsible for supervising
6. Many people who are interested in adopting a dog do not consider greyhounds, they mistakenly believe that greyhounds require more exercise than most dogs.
- do not consider greyhounds, they mistakenly believe
 - did not consider greyhounds with a mistaken belief
 - do not consider greyhounds because they mistakenly believe
 - and have not considered greyhounds in that they mistakenly believed
 - had not considered greyhounds because of mistakenly believing
7. Once near extinction in the continental United States, stronger environmental protection benefited bald eagles, and they are no longer considered an endangered species.
- stronger environmental protection benefited bald eagles, and they are
 - stronger environmental protection benefited the bald eagle, which is
 - bald eagles benefited from stronger environmental protection and are
 - bald eagles benefited from stronger environmental protection, they are
 - but bald eagles benefited from stronger environmental protection, and they are

8. Contrary to popular myth, many people enjoy working and even report higher levels of satisfaction during work hours than during leisure time.
- and even report
 - but who also report
 - as well as even reporting
 - but even reporting
 - which they even report
9. When the two long-standing rivals finally met, tension was created not only by what they said but also what they did not say.
- but also what they did not say
 - but also what was not said
 - but also by what they did not say
 - and by what they did not say
 - and what was not said by them
10. Music seems to be universal, which exists in some form in all human cultures.
- which exists
 - where it exists
 - it exists
 - exists
 - existing
11. Some scientists believe that the number of stars in the universe have been seriously underestimated and may be as much as three times greater than previously thought.
- have been
 - having been
 - has been
 - were
 - to be



Unauthorized copying or reuse of
any part of this page is illegal.



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) (B) (C) (D) (E)

12. Though both boys had seen countless magic acts

A

and knew a few tricks themselves, neither David

B

and Andrew could figure out how the illusionist

C

D

made objects disappear. No error

E

13. When visiting Naples, Italy, one can experience the

A

B

beautiful Bay of Naples, visit numerous monuments,

C

castles, and churches, and you can see famous

D

Mount Vesuvius. No error

E

14. In the 1950s and 1960s, Dorothy Chandler, an

influential supporter of the arts, helped revitalize

A

B

downtown Los Angeles by raising millions of dollar

C

to build a music center. No error

D

E

15. Rising above the sound of traditional band

A

B

instruments, the unexpectedly tapping of pencils on

C

music stands punctuated the new musical composition

D

we heard last night. No error

E

16. Although the inexpensive hotel was farther from the

A

center of town than my cousin and I would have liked

B

our room was more comfortable than her and I could

C

have hoped. No error

D

E

17. A college that allows students to graduate

when not having obtained an education

A

has not fulfilled its obligation to those

B

C

D

students. No error

E



18. At the base of the canyon the river flows serenely,
A
 carrying boaters and rafters past beautiful rock
B
 formations before finally reaching a meadow
C
 where eagles gather each spring. No error
D
E

19. Other than Earth, Saturn's moon Titan is the only
A
 body in the solar system that harbors liquid on their
C
 surface. No error
E

20. Anthropologists are unsure whether the knotted
A
 strings that the Incas used for record keeping merely
B
 represented numbers or actually constituted a form
C
D
 of recorded language. No error
E

21. Despite receiving little publicity, the young director's
A
 new film has so far been the more successful of
B
C
 the three movies that opened in theaters this week.
D
 No error
E

22. The cassowary, a flightless bird capable of running
A

30 miles an hour and equipped with claws the size
B
 of daggers, rank among the world's most dangerous
C
 birds. No error
E

23. For the children aboard the ship, the most delightful
A
 moment of the cruise occurred when they
C
 caught sight of a school of whales frolicking
D
 on the surface of the sunlit sea. No error
E

24. Since the construction of a factory on land that was
A
 once heavily forested, the region's emission of
C
 greenhouse gases have increased significantly.
D
 No error
E

25. When the weather is hot, dairies can be affected
A
 because at high temperatures cows tend to eat
B
 less and therefore produce less milk than cooler
C
 temperatures. No error
E

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.



26. In 1983 the popular writer who published his fourth
 A
 novel, a science-fiction thriller that was to receive
 B C
 critical praise and achieve commercial success.
 D

No error
 E

27. The cheetah, the world's fastest land animal, is built
 for speed: exceptionally long legs allow them to take
 A B
 huge strides, while a small head offers
 C
 little wind resistance. No error
 D E

28. Despite watering it daily, the plant continued to shed
 A B
 its leaves, probably because it had been placed in such
 C
 a dimly lit corner of the room. No error
 D E

29. The presentation of the award was proceeded by
 A B
 several short speeches in praise of Ms. Harper's
 C
 many contributions to the community. No error
 D 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 number of planets in our galaxy capable of supporting life is now estimated to be in the hundreds of thousands. (2) Furthermore, they believe it to be very unlikely that Earth is the only place in the galaxy where life actually exists. (3) People who study life on other planets are known as astrobiologists.

(4) Of course, there is no direct evidence of the existence of living beings elsewhere: no extraterrestrial life-form has been discovered to date. (5) However, there are scientists who have observed what they consider compelling indirect evidence of life on distant planets. (6) For example, it was thought that the presence of organic materials on a Martian meteorite found in Antarctica in 1996 is proof of life on Mars. (7) Others point to a powerful radio signal from outer space detected in 2003, arguing that it had a frequency likely to be used for interplanetary communication and is therefore indirect evidence of extraterrestrial life.

(8) Some argue that the organic molecules in the Martian meteorite were simply contaminants from Earth. (9) Equally doubtful are those who contend that the 2003 radio signal was very likely a naturally occurring phenomenon that had simply never been seen before.

(10) Such skeptics will probably never be convinced by anything less than direct evidence. (11) Believers in extraterrestrial life can take encouragement from an ever-increasing body of indirect evidence, as astronomers continue to learn more about the planets outside our solar system. (12) Perhaps the most exciting development to date, from the believer's point of view, was the detection, in 2010, of the planet Gliese 581g, where liquid water could exist.



30. In context, which of the following is the best version of the underlined portion of sentence 2 (reproduced below) ?

Furthermore, they believe it to be very unlikely that Earth is the only place in the galaxy where life actually exists.

- (A) (As it is now)
- (B) Based on those calculations, they consider it
- (C) Acknowledging the vastness of these dimensions, they find it
- (D) Given such a large number of livable planets, it seems
- (E) Despite this uncertainty, it is thought to be

31. In context, which is the best way to deal with sentence 3 (reproduced below) ?

People who study life on other planets are known as astrobiologists.

- (A) Delete it from the passage.
- (B) Move it to the beginning of the second paragraph.
- (C) Insert “besides Earth” immediately after “planets”.
- (D) Insert “also” immediately before “known”.
- (E) Change “known as” to “called”.

32. In context, which of the following is the best version of the underlined portion of sentence 6 (reproduced below) ?

For example, it was thought that the presence of organic materials on a Martian meteorite found in Antarctica in 1996 is proof of life on Mars.

- (A) (as it is now)
- (B) it has been alleged
- (C) one might suppose
- (D) some of them believe
- (E) there is speculation

33. Which of the following sentences, if inserted immediately before sentence 8, would most effectively link the second and third paragraphs?

- (A) These conclusions were widely regarded as inevitable.
- (B) Not all scientists share these interpretations, however.
- (C) But others questioned the origin of this signal.
- (D) Of course, other frequencies could also be used by extraterrestrials trying to communicate.
- (E) A philosopher might very well question this distinction between direct and indirect evidence.

34. In context, which of the following is the best revision of the underlined portion of sentence 11 (reproduced below) ?

Believers in extraterrestrial life can take encouragement from an ever-increasing body of indirect evidence, as astronomers continue to learn more about the planets outside our solar system.

- (A) In addition, believers
- (B) After all, believers
- (C) Consequently, believers
- (D) Likewise, believers
- (E) Meanwhile, believers

35. Which of the following observations would most appropriately be used to clarify a statement in the final paragraph?

- (A) That the term “skeptic” was originally applied to a school of Greek philosophers who doubted the possibility of knowing anything
- (B) That Gliese 581g derives its name from that of German astronomer Wilhelm Gliese, who specialized in the study of nearby stars
- (C) That Gliese 581g was first detected by astronomers in the Lick-Carnegie Exoplanet Survey, led by Steven S. Vogt
- (D) That the presence of liquid water is widely believed to be necessary to the development of life anywhere in the universe
- (E) That the Milky Way galaxy, which includes our solar system, is estimated to contain at least 200 billion stars

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

20 Questions

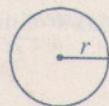
Turn to Section 7 (page 6) of your answer sheet to answer the questions in this section.

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

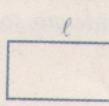
- The use of a calculator is permitted.
- All numbers used are real numbers.
- Figures that accompany problems in this test are intended to provide information useful in solving the problems. They are drawn as accurately as possible EXCEPT when it is stated in a specific problem that the figure is not 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

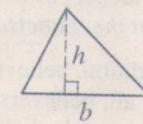


$$A = \pi r^2$$

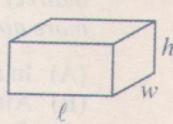
$$C = 2\pi r$$



$$A = \ell w$$



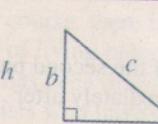
$$A = \frac{1}{2}bh$$



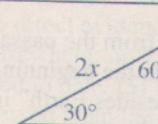
$$V = \ell wh$$



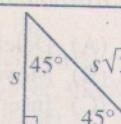
$$V = \pi r^2 h$$



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



$$\text{Special Right Triangles}$$



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 $4ak - 7 = 5$, what is the value of ak ?

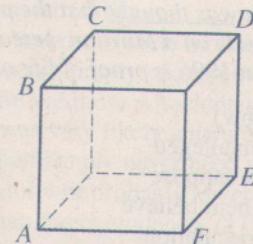
(A) $-\frac{1}{2}$

(B) $\frac{1}{2}$

(C) 2

(D) 3

(E) 8



2. In the cube represented above, the distance from point A to point D is the same as the distance from point F to which of the following points?

(A) A

(B) B

(C) C

(D) D

(E) E

GO ON TO THE NEXT PAGE

$0, 2, 4, \dots, n$

3. In the sequence above, the first term is 0, and each term after the first is 2 more than the preceding term. If the sequence consists of 8 terms, what is the value of n ?

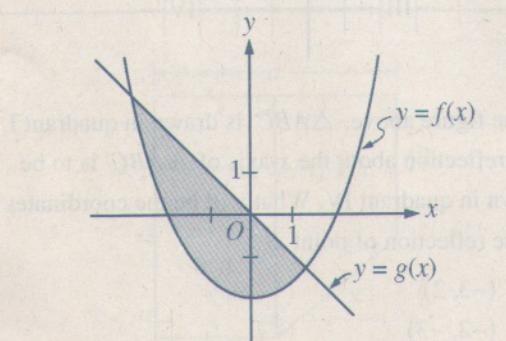
(A) 8
 (B) 14
 (C) 16
 (D) 18
 (E) 24

5. Nathan scored 76 points on a test consisting of 16 four-point algebra questions and 12 three-point geometry questions. He missed 3 algebra questions. If no partial credit was given, how many questions did he miss on the entire test?

(A) 7
 (B) 8
 (C) 12
 (D) 13
 (E) 24

6. If $a = 2b$ and $b = 3c$, what is a in terms of c ?

(A) $\frac{1}{6}c$
 (B) $\frac{2}{3}c$
 (C) c
 (D) $5c$
 (E) $6c$



4. The graphs of the quadratic function f and the linear function g are shown in the xy -plane above. Which of the following points lies in the shaded region?

(A) $(-1, 0)$
 (B) $(-1, 2)$
 (C) $(0, 2)$
 (D) $(2, -1)$
 (E) $(2, 0)$

GO ON TO THE NEXT PAGE

GO ON TO THE NEXT PAGE

7. The product, sum, and average (arithmetic mean) of three integers are equal. If two of the integers are 7 and -7 , what is the third integer?
- (A) -49
 (B) -7
 (C) 0
 (D) 7
 (E) 49

1. The use of a calculator is permitted.

2. All numbers used are real numbers.

3. Figures that accompany problems in this test are included to provide information useful in solving the problems. Where figures show a line of symmetry, it is indicated by a dashed line. It is assumed that the figures are drawn to scale. All figures are in a plane unless otherwise indicated.

8. In the xy -plane, what is the perimeter of the rectangular region bounded by the x -axis, the y -axis, and the graphs of $x = 1$ and $y = 2$?

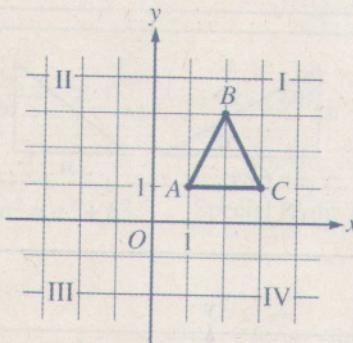
- (A) 2
 (B) 3
 (C) 4
 (D) 5
 (E) 6

$$x + 2y = 10$$

$$y + z = 20$$

9. Based on the equations above, what is the value of $x + 3y + z$?

- (A) -20
 (B) -10
 (C) 10
 (D) 20
 (E) 30

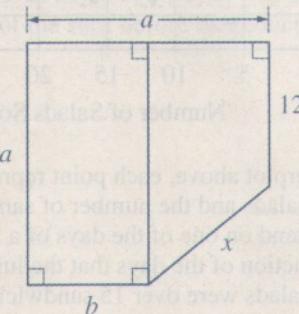


10. In the figure above, $\triangle ABC$ is drawn in quadrant I. The reflection about the x -axis of $\triangle ABC$ is to be drawn in quadrant IV. What will be the coordinates of the reflection of point B?

- (A) $(-3, 2)$
 (B) $(-2, -3)$
 (C) $(-2, 3)$
 (D) $(2, -3)$
 (E) $(2, -2)$

11. A company has 204 employees, and one employee is to be selected at random. The probability of selecting a programmer is $\frac{3}{17}$, and the probability of selecting an editor is $\frac{1}{34}$. If no employee is both a programmer and an editor, how many employees in the company are neither programmers nor editors?

(A) 156
 (B) 162
 (C) 168
 (D) 172
 (E) 186



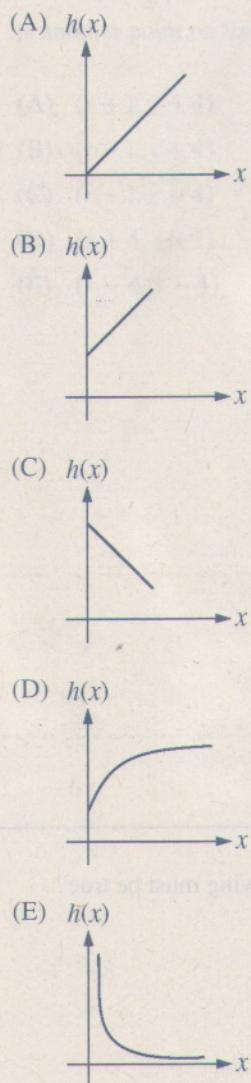
Note: Figure not drawn to scale.

12. In the figure above, $a = 20$ and $b = 14$. What is the value of x ?

(A) 6
 (B) 8
 (C) 10
 (D) 12
 (E) 14

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.

13. The function h defined by $h(x) = 20 + 1.5x$ can be used to estimate the future adult height, in inches, of a girl, where x is the height, in inches, of the girl at age two. Which of the following graphs could represent the function h ?



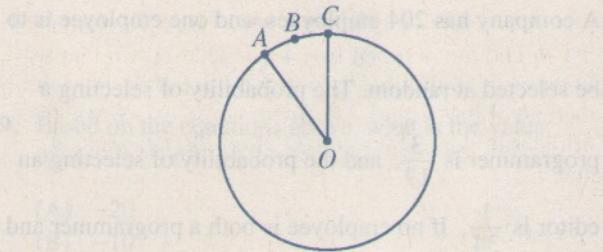
14. If the measures of the acute angles of a right triangle are in the ratio of 4:5, what is the measure of the smallest angle in the triangle?

(A) 10°
 (B) 20°
 (C) 40°
 (D) 50°
 (E) 80°

15. If $a > b$, which of the following must be true?

(A) $a > 0$
 (B) $b < 0$
 (C) $ab > 0$
 (D) $a - b > 0$
 (E) $a + b > 0$

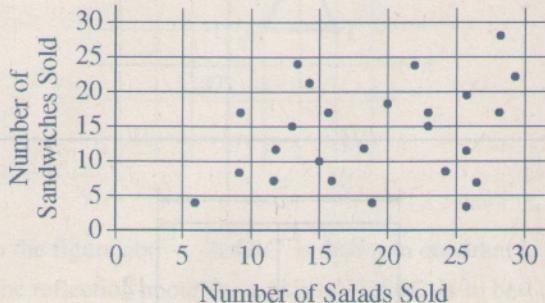
GO ON TO THE NEXT PAGE



16. In the figure above, O is the center of the circle, and the measure of $\angle AOC$ is 36° . The length of arc \widehat{ABC} is x . What is the circumference of the circle in terms of x ?

(A) $5x$
 (B) $6x$
 (C) $9x$
 (D) $10x$
 (E) $12x$

SALES AT A LUNCH STAND



17. In the scatterplot above, each point represents the number of salads and the number of sandwiches sold at a lunch stand on one of the days of a 25-day period. For what fraction of the days that the lunch stand sold at least 20 salads were over 15 sandwiches also sold?

(A) $\frac{4}{13}$
 (B) $\frac{5}{14}$
 (C) $\frac{1}{2}$
 (D) $\frac{7}{12}$
 (E) $\frac{3}{5}$

GO ON TO THE NEXT PAGE

18. List A consists of 15 positive numbers. The median of list A and the range of list A are equal. Each number in list A is multiplied by 4 to form list B . If m is the median of list B and r is the range of list B , which of the following shows the relationship between m and r ?

- (A) $m = r$
(B) $m = 2r$
(C) $m = 4r$
(D) $m = \frac{1}{2}r$
(E) $m = \frac{1}{4}r$

19. The price of a shirt, after it was reduced 20 percent, is p dollars. In terms of p , what was the original price, in dollars, of the shirt before the reduction?

- (A) $1.80p$
(B) $1.25p$
(C) $1.20p$
(D) $0.80p$
(E) $0.75p$

20. In the xy -plane, lines ℓ and k are parallel. Line ℓ passes through the point $(-1, -6)$ and the vertex of the parabola with the equation $y = -2(x - 1)^2 + 2$. If the point (r, s) lies on line k , which of the following is another point on line k ?

- (A) $(r + 1, s + 4)$
(B) $(r - 1, s + 4)$
(C) $(r + 1, s - 4)$
(D) $(r + 4, s + 1)$
(E) $(r - 4, s - 4)$

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.



Unauthorized copying or reuse of
any part of this page is illegal.



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) (E)

1. The interviews published in the magazine were actually more like -----, open and friendly exchanges of ideas and feelings.
 - (A) conversations (B) invitations
 - (C) excursions (D) confrontations
 - (E) translations
2. The student's actions struck many as -----, but they were actually intended to ----- a point: they demonstrated the absurdity of the new school policy.
 - (A) purposeful . . make
 - (B) odd . . illustrate
 - (C) peculiar . . accept
 - (D) proud . . adopt
 - (E) justified . . examine

3. In the valleys of northern Peru, the arid climate naturally ----- leather, textiles, and other organic materials, allowing scholars to create detailed ----- of the Moche society that once flourished there.
 - (A) enhances . . prohibitions
 - (B) erodes . . impressions
 - (C) endows . . portraits
 - (D) preserves . . reconstructions
 - (E) depletes . . adaptations
4. The wild and splashy floral print skirt was far too ----- for Estela's taste; she preferred dark and understated clothing.
 - (A) timid (B) severe (C) plentiful
 - (D) meager (E) gaudy
5. Menacing clouds and a sudden drop in temperature signaled the onset of ----- weather.
 - (A) balmy (B) inhospitable (C) lofty
 - (D) distant (E) parched
6. Suffrage leader Carrie Chapman Catt was known for -----: she avoided controversy, welcomed compromise, and ----- her foes.
 - (A) appeasement . . vanquished
 - (B) duplicity . . confounded
 - (C) conciliation . . placated
 - (D) erudition . . mollified
 - (E) magnanimity . . subjugated



Unauthorized copying or reuse of
any part of this page is illegal.



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.

This passage is from a book published in 2010.

More than a century ago, the composer and bandleader John Philip Sousa warned that technology would destroy music. Testifying before the United States Congress in 1906, he said, “These talking machines are going to ruin the artistic development of music in this country. When I was a boy . . . in front of every house in the summer evenings you would find young people together singing the songs of the day or the old songs. Today you hear these infernal machines going night and day. We will not have a vocal cord left.” Sousa expanded on the theme in subsequent articles and interviews. “The time is coming when no one will be ready to submit himself to the ennobling discipline of learning music,” he declared. “Everyone will have their ready made or ready pirated music in their cupboards.” Something is irretrievably lost when we are no longer in the presence of bodies making music, Sousa also said. “The nightingale’s song is delightful because the nightingale herself gives it forth.”

Before you dismiss Sousa as a curmudgeon, you might consider how drastically music has changed in the past hundred years. It has achieved onrushing omnipresence in our world: millions of hours of its history are available on disc; rivers of digital melody flow on the Internet; MP3 players with forty thousand songs can be tucked in a back pocket or a purse. Yet, for most of us, music is no longer something we do ourselves, or even watch other people do in front of us. It has become a radically virtual medium, an art without a face. When we walk around the city on an ordinary day, our ears will register music at almost every turn—bass lines pumping from passing cars, bits of hip-hop seeping out of the headphones of teenagers on the subway, a lawyer’s cell phone tweeting Beethoven’s “Ode to Joy”—but almost none of it will be the immediate result of physical work by human hands or voices. Fewer and fewer people know how to play instruments or read music. In the future, Sousa’s ghost might say, reproduction will displace production. Zombified listeners will shuffle through the archives of the past, and new music will consist of rearrangements of the old.

Ever since Edison invented the phonograph cylinder, in 1877, people have been assessing what the medium of recording has done for and to the art of music. Inevitably, the conversation has veered toward rhetorical extremes. Sousa was a pioneering spokesman for the party of doom, which was later filled out by various reactionaries, contrarians, and Luddites.¹ In the opposite corner are the utopians, who argue that technology has not imprisoned

music but liberated it, bringing the art of the elite to the masses and the art of the margins to the center. Before

50 Edison came along, the utopians say, Beethoven’s symphonies could be heard only in select concert halls. Now the recordings carry the man from Bonn to the corners of the earth, summoning the throng hailed in the “Ode to Joy”: “Be embraced, millions!” Glenn Gould,² after renouncing live performance in 1964, predicted that within the century the public concert would disappear into the electronic ether, with a largely beneficial effect on musical culture.

Having discovered much of my favorite music through 60 LPs and CDs, I am not about to join the lamenting party. Modern urban environments are often so soulless or ugly that I’m grateful for the humanizing touch of electronic sound. But neither can I accept Gould’s slashing futurism. I want to be aware of technology’s effects, positive and 65 negative. I want a pragmatic theory that mediates between live performance and reproduction, without either apocalyptic screeching or corporate hype. Fortunately, scholars and critics have been methodically exploring this terrain for many decades, trying to figure out exactly what 70 happens when we listen to music with no musicians in the room. They have reached no unshakable conclusions, but they give us most of the conceptual tools we need in order to listen with the alertness—and the ambivalence—that this magical medium demands.

¹ Luddites were nineteenth-century English workers who destroyed laborsaving machinery as a form of protest. This term is often used to describe people who are opposed to technological change.

² Gould was a twentieth-century Canadian pianist.

7. The author’s intent in lines 1–18 is to

- (A) champion a policy
- (B) make a prediction
- (C) critique an attitude
- (D) advance a hypothesis
- (E) summarize a viewpoint

8. The tone of Sousa’s remarks in lines 4–10 (“These . . . left”) is best characterized as

- (A) hesitant
- (B) lighthearted
- (C) ambivalent
- (D) indignant
- (E) belligerent



Unauthorized copying or reuse of
any part of this page is illegal.



9. The remark about a “curmudgeon” in line 19 primarily serves to
- embrace a cynical position
 - offer a contrary viewpoint
 - mock a specific attitude
 - criticize a popular figure
 - anticipate a possible reaction
10. The list in lines 30-33 (“bass . . . Joy’ ”) primarily serves to
- underscore the diversity of contemporary music
 - highlight the vitality of urban life
 - dramatize the ubiquity of recorded music
 - illustrate a positive result of a technological innovation
 - encourage tolerance of different kinds of music
11. In line 33, “immediate” most nearly means
- prompt
 - direct
 - near
 - imminent
 - instantaneous
12. As represented in lines 37-39, listeners of the future would best be described as
- technicians
 - automatons
 - dilettantes
 - heretics
 - prodigies
13. Lines 40-58 suggest that the invention of the “phonograph cylinder” (line 40) is best characterized as
- an impractical innovation
 - a curb on human creativity
 - a panacea for struggling artists
 - a watershed in the history of music
 - a harbinger of cultural decline
14. In the final two paragraphs, the “conversation” (line 43) is best characterized as
- impassioned but largely inconclusive
 - collegial but ultimately profitless
 - polarized but surprisingly fruitful
 - short-lived but sometimes constructive
 - well-intentioned but often destructive
15. In lines 44-46, the author’s description of those who share Sousa’s convictions is best characterized as
- somewhat derisive
 - frankly puzzled
 - studiously neutral
 - openly deferential
 - extremely appreciative
16. It can be inferred that the “largely beneficial effect on musical culture” (lines 57-58) would be the
- reinterpretation of traditional classical music
 - revival of instrumental performances
 - enhancement of urban environments
 - replacement of LPs and CDs by newer technologies
 - expanded role of recorded music
17. In the final paragraph (lines 59-74), the author primarily seeks to
- acknowledge an error
 - satirize a viewpoint
 - question a development
 - find a middle ground
 - initiate a debate



Unauthorized copying or reuse of
any part of this page is illegal.

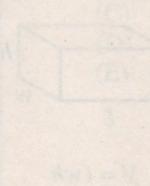


18. In line 69, “terrain” most nearly means

(A) region
(B) subject
(C) tract
(D) land
(E) distinction

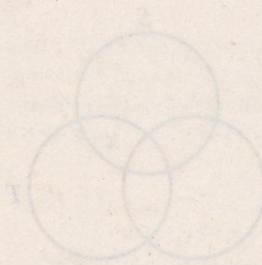
19. The primary purpose of the passage is to

(A) present the key issues in an ongoing debate
(B) explain the attitudes of a noted composer
(C) characterize the principles of an aesthetic movement
(D) advocate an unexpected solution to a pressing problem
(E) defend the view of one faction from the criticism of another



4. The function f is defined by $f(x) = \frac{1}{x}$. For which value of x is $f(x)$ undefined?

(A) $x > 0$ (B) $x > 1$
(C) $x > 2$ (D) $x > 3$
(E) $x > 4$



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 9

Time — 20 minutes

16 Questions

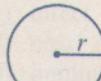
Turn to Section 9 (page 7) of your answer sheet to answer the questions in this section.

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

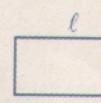
1. The use of a calculator is permitted.
2. All numbers used are real numbers.
3. Figures that accompany problems in this test are intended to provide information useful in solving the problems. They are drawn as accurately as possible EXCEPT when it is stated in a specific problem that the figure is not drawn to scale. All figures lie in a plane unless otherwise indicated.
4. 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

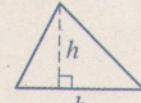


$$A = \pi r^2$$

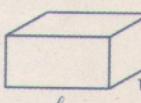
$$C = 2\pi r$$



$$A = \ell w$$



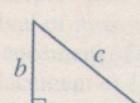
$$A = \frac{1}{2}bh$$



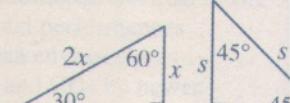
$$V = \ell wh$$



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



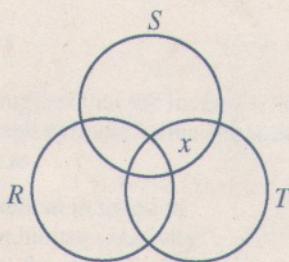
$$c^2 = a^2 + b^2$$



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. In the Venn diagram above, the circular regions represent sets R , S , and T . The x represents a set member. Which of the following sets contain x ?
- I. Set R
 - II. Set S
 - III. Set T
- (A) I only
 (B) II only
 (C) III only
 (D) II and III only
 (E) I, II, and III

$$x = 0.012$$

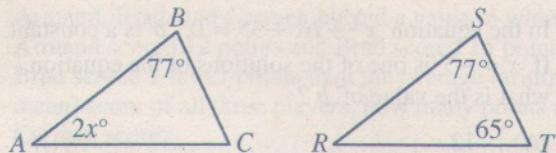
$$y = 0.120$$

$$z = 0.102$$

2. The values of x , y , and z are given above. Which of the following is true?

- (A) $x < y < z$
 (B) $x < z < y$
 (C) $y < z < x$
 (D) $z < x < y$
 (E) $z < y < x$

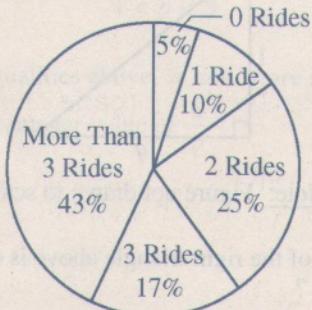
GO ON TO THE NEXT PAGE

9Unauthorized copying or reuse of
any part of this page is illegal.**9**

3. In the figure above, $\triangle ABC$ is congruent to $\triangle RST$. What is the value of x ?

(A) 19
(B) 29
(C) 38
(D) 58
(E) 142

VISITORS' RIDES AT A THEME PARK



5. The circle graph above shows the proportion of visitors who went on various numbers of rides at a theme park last week. Based on the graph, if there were 1,200 visitors last week, how many visitors rode 2 or fewer rides?

(A) 300
(B) 420
(C) 480
(D) 512
(E) 600

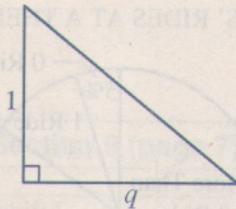
$$f(x) = x^2 + 4$$

4. The function f is defined above. How much greater is $f(3)$ than $f(2)$?

(A) 1
(B) 2
(C) 3
(D) 4
(E) 5

GO ON TO THE NEXT PAGE

GO ON TO THE NEXT PAGE



Note: Figure not drawn to scale.

6. If the area of the right triangle above is 4, what is the value of q ?

- (A) 2
 (B) 4
 (C) 8
 (D) 12
 (E) 16

8. In the equation $x^2 + bx + 35 = 0$, b is a constant.
 If $x = -5$ is one of the solutions of the equation,
 what is the value of b ?

- (A) -12
(B) -2
(C) 2
(D) 7
(E) 12

7. Two-thirds of the 540 people who attended an outdoor concert were adults. One-half of the remaining people who attended were children older than two years. How many children who attended were two years old or younger?

- (A) 90
 (B) 120
 (C) 150
 (D) 180
 (E) 270

9



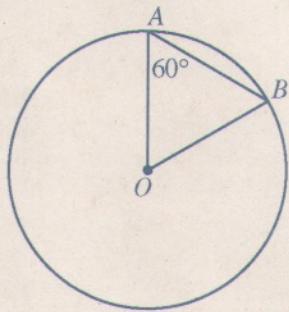
Unauthorized copying or reuse of
any part of this page is illegal.



9

9. Armand, Brad, and Carmen played a game in which Armand scored 12 points and Brad scored 15 points. If Brad scored 2 fewer points than the average (arithmetic mean) score of all three players, how many points did Carmen score?

(A) 12
(B) 15
(C) 17
(D) 18
(E) 24



10. In the figure above, point O is the center of the circle, and $AB = 10$. What is the circumference of the circle?

(A) 10π
(B) 20π
(C) $10\sqrt{2}\pi$
(D) $10\sqrt{3}\pi$
(E) $20\sqrt{2}\pi$

$$-5 \leq a \leq 5$$

$$1 < b < 5$$

11. In the inequalities above, a and b are integers. What is the least integer value of $\frac{a}{b}$?

(A) 4
(B) 2
(C) -1
(D) -2
(E) -4

GO ON TO THE NEXT PAGE

(A)
(B)
(C)
(D)
(E)

GO ON TO THE NEXT PAGE



12. A veterinarian treats only dogs, cats, and birds. In a certain month, 4 cats were treated for every 5 birds, and 12 dogs were treated for every 1 bird. If the total number of animals treated that month was between 200 and 250, how many birds were treated?

(A) 15
(B) 25
(C) 40
(D) 50
(E) 60

13. If $2x - 2y = -10$, what is the value of $y - x$?

(A) -20
(B) -5
(C) 0
(D) 5
(E) 20

14. Bill exercised for 3 minutes and burned 14 calories. Then he exercised for an additional m minutes, burning calories at this same rate. If Bill burned a total of 210 calories, which of the following equations could be used to determine the value of m ?

(A) $14(m + 1) = 210$
(B) $14 + 3(14m) = 210$
(C) $14 + \frac{3}{14}m = 210$
(D) $\frac{14}{3}(m - 3) = 210$
(E) $\frac{14}{3}(m + 3) = 210$



9



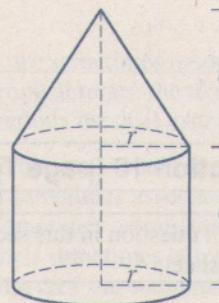
Unauthorized copying or reuse of
any part of this page is illegal.



9

15. Of the following expressions, which is equivalent to $2^x \cdot 4^{2x}$?

- (A) 2^{5x}
- (B) 2^{9x}
- (C) 2^{10x}
- (D) 2^{4x^2}
- (E) 2^{5x^2}



Note: Figure not drawn to scale.

16. The figure above shows a solid structure composed of a right circular cone and a right circular cylinder, both with base radius r and height 9. If the structure has a volume of 72π , what is the value of r ? (The volume of a cone with base radius r and height h is $\frac{1}{3}\pi r^2 h$.)

- (A) $\sqrt{6}$
- (B) $2\sqrt{3}$
- (C) $2\sqrt{6}$
- (D) $3\sqrt{3}$
- (E) $3\sqrt{6}$

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) (B) (C) (D) (E)

1. When Ross Swimmer moved to Washington to head the Bureau of Indian Affairs, Wilma Mankiller has become the first woman to serve as principal chief of the Cherokee Nation.
 - (A) Wilma Mankiller has become
 - (B) Wilma Mankiller became
 - (C) Wilma Mankiller becomes
 - (D) Wilma Mankiller, who then became
 - (E) it was Wilma Mankiller who will become

2. Residents complained about recently announced plans constructing a new airport near the city limit fearing noise pollution from jet engines.
 - (A) plans constructing
 - (B) plans for the constructing
 - (C) plans for the construction of
 - (D) plans that the construction of
 - (E) plans, which construct
3. Both Lewis and Kendal became a photographer shortly after they graduated from college.
 - (A) became a photographer
 - (B) became photographers
 - (C) had become a photographer
 - (D) having become photographers
 - (E) will become photographers
4. After several unsuccessful attempts to repair the bridge, the engineers agreed that there must be a better solution and way to solve the problem.
 - (A) engineers agreed that there must be a better solution and way to solve the problem
 - (B) engineers agreed upon there being a better solution and way to solve the problem
 - (C) engineers agreed that there must be a better solution to the problem
 - (D) engineers agreeing that there must be a better solution
 - (E) engineers, they agreed that there must be a better solution



5. With its meticulous re-creation of historical detail, *Mad Men*, a television series about an advertising agency in the 1960s, captivated audiences when it premiered in 2007.
- (A) 1960s, captivated
(B) 1960s, captivates
(C) 1960s, has captivated
(D) 1960s that captivated
(E) 1960s captivating
6. As the leaves, wood, and algae that fall into the submarine canyons decay, this causes the release of nutrients that serve as food sources for a variety of small organisms.
- (A) this causes the release of nutrients that
(B) they release nutrients that
(C) it causes nutrients to be released, they
(D) the nutrients being released by it
(E) nutrients are released by it and
7. A reserved academic before he accepted a government post, the turbulence of politics was found invigorating by the young economist.
- (A) the turbulence of politics was found invigorating by the young economist
(B) the turbulence of politics invigorated the young economist
(C) the young economist was invigorated by the turbulence of politics
(D) the young economist finding the turbulence of politics invigorating
(E) the young economist, who found the turbulence of politics invigorating
8. Although they are sometimes associated with lighthearted, tropical tunes, the ukulele has a long tradition as a serious musical instrument.
- (A) Although they are sometimes associated
(B) Although sometimes associated
(C) Despite sometimes associating it
(D) Despite their sometimes being associated
(E) In spite that they are sometimes associated
9. The distinctive appearance of Dover's white chalk cliffs has made them a popular tourist destination.
- (A) has made them
(B) have made it
(C) have made them
(D) it has made them
(E) having made it
10. Peaches come in both white and yellow varieties, neither display the slightest hint of green when ripe.
- (A) display
(B) of them displays
(C) of which displays
(D) has displayed
(E) displayed



- 11.** Itself capable of living for thousands of years, the bristlecone pine tree has needles that can last as long as 40 years.

(A) the bristlecone pine tree has needles that
 (B) it is the bristlecone pine tree that has needles that
 (C) there are needles on a bristlecone pine tree that
 (D) the needles on a bristlecone pine tree
 (E) the bristlecone pine tree's needles

- 12.** Even when hearing it from the hotel balcony several floors above the street, the noise from the parade was jarringly loud.

(A) Even when hearing it
 (B) Even hearing it
 (C) Even heard
 (D) While hearing it
 (E) It was heard

- 13.** One advantage of FM over AM radio signals is that former mode of transmission is much less susceptible to interference as compared with the latter mode.

(A) interference as compared with the latter mode
 (B) interference when compared with the latter mode
 (C) interference comparing with the latter
 (D) interference, comparatively
 (E) interference

- 14.** Situated in a tranquil spot on the western shore of the lake, the lodge's moderate rental rates reflect the smallness and simplicity of its rooms.

(A) lodge's moderate rental rates reflect
 (B) lodge's moderate rental rates reflecting
 (C) lodge has moderate rental rates that reflect
 (D) moderate rental rates of the lodge reflects
 (E) moderate rental rates of the lodge reflect

S T O P

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.

1. The new manager has chosen
 (A) a new manager has chosen
 (B) a new manager became
 (C) a new manager becomes
 (D) a new manager who became
 (E) a new manager who will become

Correct Answers and Difficulty Levels

Form Codes AEJE, BWJE

Critical Reading

Section 2

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

Number correct

Number incorrect

Section 5

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

Number correct

Number incorrect

Section 8

COR. DIFF. ANS. LEV.	COR. DIFF. ANS. LEV.
1. A 1	11. B 1
2. B 1	12. B 3
3. D 2	13. D 4
4. E 3	14. A 4
5. B 3	15. A 5
6. C 5	16. E 4
7. E 3	17. D 3
8. D 4	18. B 1
9. E 3	19. A 3
10. C 3	

Number correct

Number incorrect

Section 4

Multiple-Choice Questions		Student-Produced Response Questions	
COR. DIFF.	ANS. LEV.	COR.	DIFF.
ANS.	LEV.	ANS.	LEV.
1. B 1	9. 40	2	
2. A 2	10. 1/2,.5	2	
3. D 2	11. 2830	2	
4. B 1	12. 90	3	
5. A 3	13. 12	3	
6. D 3	14. 831	3	
7. B 4	15. 0<x<.01	4	
8. E 5	16. 1680	3	
	17. 64/9.7.11	4	
	18. 4	5	

Number correct

Number correct
(9-18)

Number incorrect

Section 7

COR. DIFF. ANS. LEV.	COR. DIFF. ANS. LEV.
1. D 1	11. B 3
2. C 1	12. C 3
3. B 1	13. B 3
4. A 1	14. C 3
5. A 3	15. D 4
6. E 2	16. D 3
7. C 2	17. D 4
8. E 3	18. A 4
9. E 3	19. B 4
10. D 2	20. A 5

Number correct

Number incorrect

Section 9

COR. DIFF. ANS. LEV.	COR. DIFF. ANS. LEV.
1. D 1	9. E 3
2. B 1	10. B 3
3. A 1	11. D 4
4. E 1	12. A 3
5. C 2	13. D 3
6. C 2	14. E 4
7. A 3	15. A 4
8. E 3	16. A 5

Number correct

Number incorrect

Section 6

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

Number correct

Number incorrect

Section 10

COR. DIFF. ANS. LEV.	COR. DIFF. ANS. LEV.	COR. DIFF. ANS. LEV.
1. B 1	6. B 3	11. A 4
2. C 1	7. C 3	12. C 4
3. B 1	8. B 3	13. E 4
4. C 1	9. A 3	14. C 5
5. A 1	10. C 3	

Number correct

Number incorrect

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).