CollegeBoard

The SAT

Question-and-Answer Service

May 2011 Administration

INSIDE:

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

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SAT

ESSAY
Time — 25 minutes

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

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

Important Reminders:

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

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

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

> Most of us tend to find rules, limits, and restraints irritating. We want to be free of anything that limits our choices. But limitations protect us. Without limitations on our behavior, too many of us will act without regard to the consequences for ourselves, for others, and for the future. Limitations contribute to, rather than take away from, our overall happiness.

Assignment: Do rules and limitations contribute to a person's happiness? 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.

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

> People today seem to spend most of their free time being passively entertained: they just sit on the couch and watch movies or television or sporting events. This is mainly because they use up all their energy at work or at school. If they had more time and energy to devote to activities outside of work or school, you can be sure they would enjoy more creative and active pursuits during their free time.

Assignment: If people worked less, would they be more creative and active during their free time? Plan and write an essay in which you develop your point of view on this issue. Support your position with reasoning and examples taken from your reading, studies, experience, or observations.

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

> While serious thinking about important matters may disturb people in the short term, it benefits them immeasurably in the long term. Only by confronting unpleasant truths and by weighing both sides of complex issues can people understand the facts—whether in history, politics, literature, or their own lives—and make appropriate decisions. People may find it difficult or uncomfortable to think seriously about important matters, but not doing so means that they are leading lives without meaning or purpose.

Assignment: Does every individual have an obligation to think seriously about important matters, even when doing so may be difficult? 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.

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

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

> Many people think that success is impossible without help and support from others. They believe that even the strongest and most successful leaders need advisers to define their goals, and followers to carry out their plans. Real success, however, cannot be claimed by those who need others to solve their problems and help them confront obstacles. Only those whose accomplishments are truly their own can claim to be successful.

Assignment: Is real success achieved only by people who accomplish goals and solve problems on their own? 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 3
Time — 25 minutes
25 Questions

Turn to Section 3 (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

(A) (B) (C) (D) ●

1. Tania excels at dancing the merengue, having ------- the steps during her childhood years in the Dominican Republic.

   (A) diverted   (B) mastered   (C) ignored
      (D) confused   (E) promised

2. The artist, often so ------- as to seem unapproachable, tended to be more relaxed and easygoing when among friends.

   (A) generous   (B) creative   (C) sympathetic
      (D) reserved   (E) reasonable

3. For centuries, Mars has been called the "Red Planet," but the designation is -------, because Mars is not precisely red.

   (A) a technicality   (B) a misnomer
      (C) an epigram   (D) an understatement
         (E) a platitude

4. In his essay, writer Rudolfo Anaya strives to ------- his sometimes incongruous Mexican and American identities by combining ------- worldviews to create one unique vision.

   (A) distinguish . . irreconcilable
   (B) assimilate . . simultaneous
   (C) synthesize . . divergent
   (D) mitigate . . redundant
   (E) reinforce . . equivalent

5. The mayor's reelection by an overwhelming majority was not so much an endorsement of his administration's ------- as it was a ------- of his opponent's extreme views.

   (A) programs . . vindication
   (B) adversities . . denunciation
   (C) methods . . dissemination
   (D) policies . . repudiation
   (E) indifference . . ratification

6. Lina Wertmüller's film *Love and Anarchy* is a ------- its title, contemplating the two concepts without taking a position on them.

   (A) demolition of   (B) critique of
      (C) commemoration of   (D) meditation on
         (E) diatribe against

7. City leaders practiced ------- out of respect for taxpayers, ------- the number of new public projects.

   (A) forbearance . . augmenting
   (B) mendacity . . circumventing
   (C) austerity . . curtailing
   (D) profligacy . . truncating
   (E) reticence . . extolling

8. To call Carlos ------- would be to mistake his natural self-confidence and youthful high spirits for willful defiance.

   (A) superfluous   (B) voracious   (C) obstreperous
      (D) duplicitous   (E) incredulous

GO ON TO THE NEXT PAGE

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 <u>stated</u> or <u>implied</u> in the passages and in any introductory material that may be provided.

Questions 9-12 are based on the following passages.

Passage 1

The power of role-playing video games resides in the ways in which they meld learning and identity. A player's taking on the identity of a character in a game constitutes
Line a form of identification with the virtual character's world,
5   story, and perspectives. The player projects his or her own hopes, values, and fears onto the character that he or she is co-creating with the video game's designers. Doing so allows the player to imagine a new identity born at the intersection of the player's real-world identities and
10 the identity of the character. This new identity speaks to, and possibly transforms, the player's values.

Passage 2

Role-playing video games offer us many different contexts for presenting ourselves. Those possibilities are particularly important for adolescents because they offer
15 what psychologist Erik Erikson describes as a moratorium —a safe space for the personal experimentation that is so crucial in adolescent development. But some people who gain fluency in expressing multiple aspects of self may find it harder to develop authentic selves. Children who
20 write narratives for the characters they play may grow up with too little experience in how to share their real feelings with other people. Role-playing video games have made it possible to have the illusion of companionship without the demands of friendship.

9. Both passages suggest that video games

(A) are underutilized as educational tools
(B) negatively influence psychological development
(C) rely on a common set of characters and situations
(D) allow players to experience alternative identities
(E) mirror experiences players are likely to have in real life

10. In line 4, "form" most nearly means

(A) structure
(B) figure
(C) pattern
(D) type
(E) custom

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

(A) Passage 1 offers an analysis of an activity that Passage 2 suggests may be harmful.
(B) Passage 1 mounts an ardent defense of a hobby that Passage 2 portrays as frivolous.
(C) Passage 1 concedes that a position endorsed by Passage 2 has some validity.
(D) Passage 1 provides a social explanation for a phenomenon that Passage 2 argues is best understood psychologically.
(E) Passage 1 gives a simplified account of an experience that Passage 2 claims is extremely complex.

12. Both authors make the point that players of video games are

(A) most often children and teens
(B) sometimes changed by the games they play
(C) typically dedicated to principles of fair play
(D) generally representative of society as a whole
(E) usually good at separating their real and virtual lives

GO ON TO THE NEXT PAGE

Questions 13-25 are based on the following passage.

After segregationist practices barred Black American singer Marian Anderson from a scheduled Washington, D.C., performance in 1939, the federal government sponsored her in a public concert on Easter Sunday. In this adaptation from a 2003 novel, Delia, a Black American voice student, arrives for that concert.

She steps off the train into a capital huddling under blustery April. She half-expects the cherry trees to greet her right inside Union Station. The coffered barrel vault arches
Line over her, a fading neoclassical cathedral to transportation
5 that she steps through, making herself small, invisible. She moves through the crowd with tight, effacing steps, waiting for someone to challenge her right to be here.

Washington: every fortunate Philadelphia schoolgirl's field trip, but it has taken Delia until twenty to see the
10 point of visiting. She heads out of the station and bears southwest. She nods toward Howard University, her father's school, where he suggested she go make something of herself. The Capitol rises up on her left, more unreal in life than in the thousands of silver images she grew up
15 suspecting. The building that now stands open to Black people again,[1] after a generation, bends the very air around it. She can't stop looking. She walks into the waking spring, the river of moving bodies, giggling even as she hushes herself up.

20 The whole city is a postcard panorama. Like being inside a grade-school civics text. Today, at least, the monument-flanked boulevards flow with people of all races. The group from Union Baptist Church told her to look for them up front on the left, near the steps of the
25 Lincoln Memorial. She has only to hook right, on Constitution Avenue, to see how naive those plans were. There'll be no rendezvous today. To the west, a crowd gathers, too dense and ecstatic to penetrate.

Delia Daley looks out over the carpet of people, more
30 people than she knew existed. Her steps slow as she slips in behind the mile-long crowd. All in front of her, the decades-long Great Migration[2] comes home. She feels the danger, right down her spine. A crowd this size could trample her without anyone noticing. But the prize lies
35 at the other end of this gliding crush. She breathes in, forcing her diaphragm down—*support, appoggio!*—and plunges in.

Something here, a thing more than music, is kicking in the womb. Something no one could have named
40 two months ago now rises up, sucking in its first stunned breaths. Just past Delia in the press of bodies, a high schooler—though from the look of her, high school is a vanished dream—spins around, flashing, to catch the eye of anyone who'll look at her, a look of delivery that has
45 waited lifetimes.

Delia pushes deeper into the sea, her throat, like a pennant, unfurling. Her larynx drops, the release her voice teacher Lugati has been hounding her these last ten months to find. The lock opens and a feeling descends on her—
50 confirmation of her chosen life. She's on her appointed track, she and her people. Each will find her only way forward. She wants to kick back and call out, as so many around her are already doing, White people within earshot or no. This is not a concert. It's a revival meeting, a
55 national baptism, the riverbanks flooded with waves of expectation.

Inside this crowd, she feels the best kind of invisible. The slate-colored combed-silk dress that serves so well for Philadelphia concerts is all wrong here, too sleek by half,
60 her hemline missing low by a full two inches. But no one marks her except with pleasure.

The crowd condenses. It's standing room only, flowing the length of the reflecting pool and down West Potomac Park. The floor of this church is grass. The columns of this
65 nave are budding trees. The vault above, an Easter sky. The deeper Delia wades in toward the speck of grand piano, the stickpin corsage of microphones where her idol will stand, the thicker this celebration. The press of massed desire lifts and deposits her, helpless, a hundred yards upstream,
70 facing the Tidal Basin. Schoolbook cherry trees swim up to fill her eyes, their blossoms mad. They wave the dazzle of their pollen bait and, in this snowstorm of petals, fuse with every Easter when they ever unfolded their promissory color.

75 And what color is this flocking people? She's forgotten even to gauge. She never steps out in a public place without carefully averaging the color around her, the measure of her relative safety. But this crowd wavers like a horizon-long bolt of crushed velvet. Its tone changes with every turn of
80 light and tilt of her head. A mixed crowd, the first she's ever walked in, American. Both people are here in abundance, each waiting for the sounds that will fill their own patent lack. No one can be barred from this endless ground floor.

---

[1] The desegregation of the federal government began during the presidency of Franklin Roosevelt (1933–1945).

[2] A movement of Black Americans from the southern United States to the north starting in 1916.

13. Which characterization best describes the passage?

(A) An impressionistic account of a significant public event

(B) An idiosyncratic analysis of a puzzling moment in history

(C) A broad overview of an important change in American society

(D) A personal commentary on a controversial government decision

(E) A nostalgic recollection of a memorable personal achievement

GO ON TO THE NEXT PAGE

14. In line 10, "bears" most nearly means

(A) conducts
(B) escorts
(C) assumes
(D) proceeds
(E) offers

15. Lines 20-21 ("The whole . . . text") suggest which of the following about Delia's reaction to the city?

(A) She feels claustrophobic in the city.
(B) She is put off by the city's many monuments.
(C) She sees an idealized version of the city.
(D) She enjoys the city's many educational opportunities.
(E) She is amazed by the sheer size of the city.

16. In line 32, "comes home" metaphorically suggests that the migrants can now

(A) adopt a new lifestyle
(B) feel that they belong
(C) recognize old friends
(D) rejoin their families
(E) reclaim lost property

17. In lines 38-41 ("Something here . . . breaths"), the imagery serves to convey the

(A) unavoidable vulnerability of artists
(B) refreshing innocence of an individual's behavior
(C) startling novelty of a development
(D) subtle danger within a happy situation
(E) insistent curiosity of human beings

18. The behavior of the "high schooler" mentioned in lines 41-42 expresses

(A) unrestrained aggression
(B) cheerful perplexity
(C) exuberant celebration
(D) serene contentment
(E) patient resignation

19. The reference to "lifetimes" in line 45 links one person's perspective to a

(A) process repeated in every decade
(B) desire shared by generations
(C) promise made by parents
(D) goal embraced by elected leaders
(E) tradition celebrated by all Americans

20. In context, the statement "This is not a concert" (line 54) makes what point?

(A) Delia is concerned that she will not be able to hear Anderson's performance.
(B) Delia worries that political concerns will overshadow the concert.
(C) The concert-goers are uneasy about the size of the crowd.
(D) Anderson has not yet begun her performance.
(E) The event has a significance beyond that of a mere concert.

21. The images of flowing water in lines 62-70 ("It's . . . Basin") primarily portray the crowd as

(A) an indefinable feature of the landscape
(B) a temporary, passing presence
(C) a frightening intrusion into a city
(D) a boundary between the present and the future
(E) a relentless force of nature

22. In line 71, "mad" most nearly means

(A) angry
(B) inexplicable
(C) wild
(D) hilarious
(E) insane

23. In line 79, "tone" most nearly means

(A) sound
(B) color
(C) manner
(D) style
(E) fitness

24. The narrator's use of "American" in line 81 suggests that

   (A) a barrier in American society has been removed
   (B) a collective action is inconsistent with American ideals
   (C) a fascination with celebrities affects all Americans
   (D) such enthusiastic displays have become common in American life
   (E) ethnic self-consciousness is inescapable for Americans

25. In the context of the passage as a whole, the last sentence ("No one . . . floor") suggests that the crowd gathered for the concert is

   (A) upset by the lack of progress in American society
   (B) looking backward to a burdensome past
   (C) so vast that the participants feel overwhelmed
   (D) unaware of the significance of the moment
   (E) serving as a foundation for social inclusiveness

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.
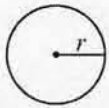
SECTION 4
Time — 25 minutes
20 Questions

Turn to Section 4 (page 5) 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.
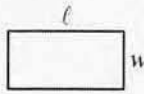
Notes

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.
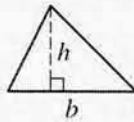
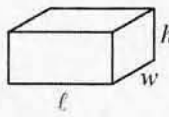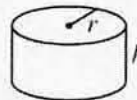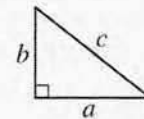**Reference Information**

$A = \pi r^2$
$C = 2\pi r$

$A = \ell w$

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

$V = \ell wh$

$V = \pi r^2 h$

$c^2 = a^2 + b^2$
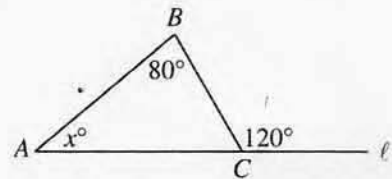
Special Right Triangles

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. If 5 more than x is equal to 10, what is the value of x ?

(A) -15
(B) -5
(C) 2
(D) 5
(E) 15

2. In the figure above, what is the value of x ?

(A) 30
(B) 40
(C) 50
(D) 60
(E) 80

GO ON TO THE NEXT PAGE

NUMBER OF BANK BRANCHES
IN REGION X

Bank	Number of Branches
A	20
B	12
C	39
D	36
E	28
F	25
G	28
H	10
I	21

3. The table above lists the number of branches for each of the nine banks in Region X. What is the median number of branches for the banks in this region?

(A) 25
(B) 26
(C) 27
(D) 28
(E) 29

4. The sum of which of the following combinations of numbers will be odd?

(A) One even and two odd numbers
(B) Two even numbers
(C) Three even numbers
(D) Three odd numbers
(E) Four odd numbers
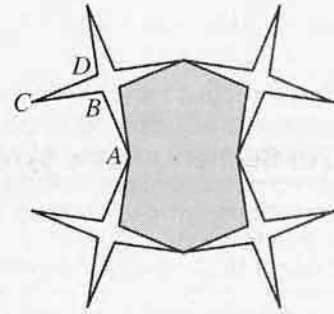
5. In the figure above, all sides of the 4-pointed stars are the same length; for example, $AB = BC = CD$. The perimeter of each star is 24. What is the perimeter of the shaded region?
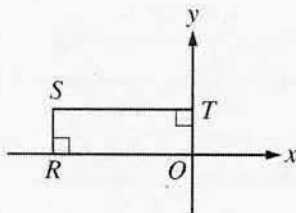
(A) 40
(B) 36
(C) 32
(D) 30
(E) 24

6. If $xy = 5$, $xz = 10$, $yz = 2$, and x, y, and z are positive, what is the value of xyz ?

(A) 5
(B) 10
(C) 20
(D) 25
(E) 50

$$S(L) = 3L - 20.5$$

7. The function S defined above can be used to approximate a woman's shoe size in the United States, where L is the woman's foot length, in inches. According to this function, which of the following best approximates the shoe size of a woman whose foot length is 9.3 inches?

(A) $5\frac{1}{2}$

(B) 6

(C) $6\frac{1}{2}$

(D) 7

(E) $7\frac{1}{2}$

WORLD'S AGRICULTURAL LABOR FORCE
(year 2000)
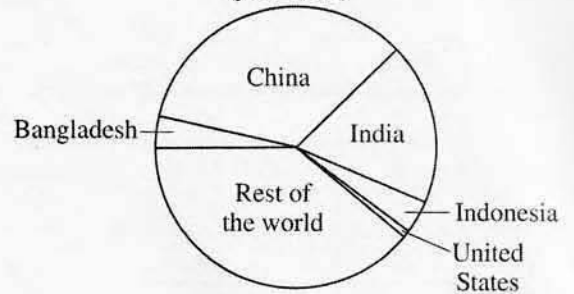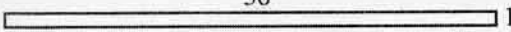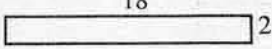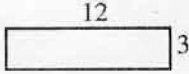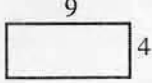
9. The circle graph above shows the portion of the world's agricultural labor force for five specific countries and the rest of the world in 2000. Which of these countries had approximately 20 percent of the world's agricultural labor force?

(A) Bangladesh
(B) China
(C) India
(D) Indonesia
(E) United States

8. In the xy-plane above, the length of $\overline{ST}$ is 3 times the length of $\overline{RS}$. If the coordinates of S are $(-3, k)$, what is the value of k?

(A) -3
(B) -1
(C) 1
(D) 3
(E) 9

10. Let the "compactness index" of a rectangle be defined as $\dfrac{2\ell w}{\ell^2 + w^2}$, where ℓ and w represent the length and width, respectively, of the rectangle. Each of the following rectangles has an area of 36. Which one has a compactness index closest to $\dfrac{3}{4}$?

(A) ⟦ 36 ⟧ 1

(B) ⟦ 18 ⟧ 2

(C) ⟦ 12 ⟧ 3

(D) ⟦ 9 ⟧ 4

(E) ⟦ 6 ⟧ 6

11. The digits 3, 6, 7, and 8 will be used <u>without repetition</u> to form different 3-digit numbers. Of all such numbers, how many are greater than 500 ?

(A)   6
(B) 12
(C) 18
(D) 24
(E) 48
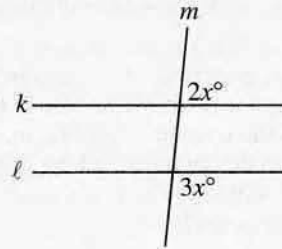
Note: Figure not drawn to scale.

12. In the figure above, if k and ℓ are parallel lines intersected by line m, what is the value of $2x$?

(A) 30
(B) 45
(C) 60
(D) 72
(E) 85

13. If $y^5 = 50$ and $z^2 = 10$, what is the value of $y^{10} z^{-2}$?

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

GO ON TO THE NEXT PAGE

14. For all integers n, let the function f be defined by $f(n) = n^2 - n$. What is the value of $f(-1)$?

    (A) −2
    (B) −1
    (C)   0
    (D)   1
    (E)   2
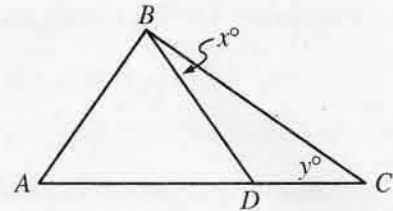
Note: Figure not drawn to scale.

16. In the figure above, if $y = 40$, $\overline{AB} \perp \overline{BC}$, and $AB = BD$, what is the value of x ?

    (A) 10
    (B) 20
    (C) 25
    (D) 30
    (E) 35

LAKESIDE VIDEO
INCOME AND EXPENSES

□ = Total Income
■ = Total Expenses
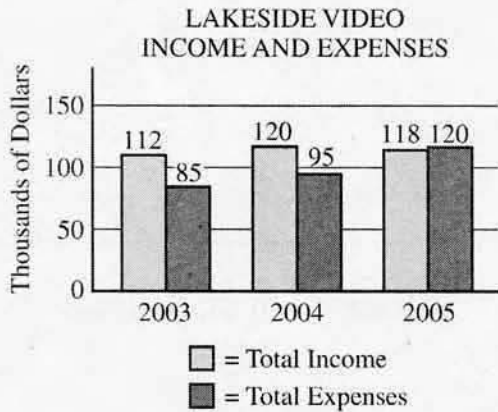
15. The graph above shows the total income and total expenses of Lakeside Video for each year from 2003 through 2005. What is the ratio of net income to total expenses for the 3-year period? (Net income equals total income minus total expenses.)

    (A) 1 to 3
    (B) 1 to 6
    (C) 1 to 7
    (D) 3 to 10
    (E) 13 to 45

17. If $x > 0$, then 2 percent of 5 percent of $3x$ equals what percent of x ?

    (A) 0.03%
    (B) 0.3%
    (C) 0.6%
    (D) 3%
    (E) 6%

GO ON TO THE NEXT PAGE

18. When the area of a certain circle is divided by π, the result is the square of an integer. Which of the following could be the diameter of the circle?

(A) 12
(B) 11
(C) 9
(D) 7
(E) 5

19. The product of a and b is equal to x, and the sum of a and b is equal to y. If x and y are positive numbers, what is $\dfrac{1}{a} + \dfrac{1}{b}$ in terms of x and y?

(A) $\dfrac{x}{y}$

(B) $\dfrac{y}{x}$

(C) xy

(D) $\dfrac{1}{x} + \dfrac{1}{y}$

(E) $\dfrac{1}{x+y}$

20. If $n \leq -2$, which of the following has the least value?

(A) $-\dfrac{1}{n^2}$

(B) $\dfrac{1}{n^2}$

(C) $\dfrac{1}{n}$

(D) $\dfrac{1}{n-1}$

(E) $\dfrac{1}{n+1}$

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.

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SECTION 5
Time — 25 minutes
35 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.

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

Ⓐ ● Ⓒ Ⓓ Ⓔ

1. The Four Corners Monument in the southwestern region of the United States, marking the place where the boundaries of Arizona, Colorado, New Mexico, and Utah intersect.

(A) States, marking the place
(B) States marks the place
(C) States, the place
(D) States, it marks
(E) States marking

2. The current generation of high school students has more educational opportunities, job training possibilities, and career options to consider before entering the workforce than any other generation has had.

(A) any other generation has had
(B) do any generation
(C) for other generations
(D) with other generations
(E) would any generation

3. In the Bay of Fundy the rising tide produces a so powerful inward surge that it actually reverses the normal flows of several rivers.

(A) a so powerful inward surge
(B) a powerful inward surge; so
(C) an inward surge so powerful
(D) an inward surge, it is so powerful
(E) so powerful of an inward surge

4. Seeking to reduce pollution from conventional electricity plants, ways to convert the energy of ocean waves into usable power are being considered by the state of Oregon.

(A) ways to convert the energy of ocean waves into usable power are being considered by the state of Oregon
(B) ways of converting the energy of ocean waves into usable power are something being considered by the state of Oregon
(C) the conversion of the energy of ocean waves into usable power has been considered by the state of Oregon
(D) the state of Oregon is considering ways of ocean wave energy being converted into usable power
(E) the state of Oregon is considering ways to convert the energy of ocean waves into usable power

GO ON TO THE NEXT PAGE ⟩

5. On hot days, the elephant flaps its ears <u>constantly, this creates a slight breeze that cools surface blood vessels, allowing cooled blood to circulate</u> throughout the body.

(A) constantly, this creates a slight breeze that cools surface blood vessels, allowing cooled blood to circulate
(B) constantly, and creating a slight breeze for cooling surface blood vessels, which allows cooled blood to circulate
(C) constantly, creating a slight breeze that cools surface blood vessels so that cooled blood can circulate
(D) constantly: in this way, it creates a slight breeze and this cools surface blood vessels, allowing cooled blood circulating
(E) constantly with the creation of a slight breeze in cooling surface blood vessels, so cooled blood can circulate

6. Henry Wadsworth Longfellow was a descendant of John and Priscilla Alden, <u>whose romance he celebrated</u> in the narrative poem "The Courtship of Miles Standish."

(A) whose romance he celebrated
(B) he celebrated their romance
(C) their romance was celebrated by him
(D) it was their romance he celebrates
(E) having celebrated their romance

7. Many college students think that school policies should not be dictated by administrative officers <u>but instead they should be submitted to the approval of the students</u>.

(A) but instead they should be submitted to the approval of the students
(B) but they should have been submitted to the approval of the students
(C) but should be submitted to the students for approval
(D) because they should be submitted for their approval to the students
(E) however, they ought to be submitted to the students for their approval

8. The development of cameras so small that they can be swallowed by patients <u>have made diagnosing certain diseases much easier.</u>

(A) have made diagnosing certain diseases much easier
(B) has made it much more easier to diagnose certain diseases
(C) has made certain diseases much easier to diagnose
(D) make diagnosing certain diseases much easier
(E) are making it much easier to diagnose certain diseases

9. The new television show has become instantly <u>popular, the characters are realistic and the sound track including with it</u> songs by famous bands.

(A) popular, the characters are realistic and the sound track including with it
(B) popular, its characters are realistic with a sound track including
(C) popular; having characters that are realistic and a sound track that includes
(D) popular because the characters are realistic and the sound track includes
(E) popular as the characters are realistic, in addition, the sound track includes

10. When creating collections of new clothing, <u>styles of the past have often influenced contemporary fashion designers</u>.

(A) styles of the past have often influenced contemporary fashion designers
(B) styles of the past often have an influence on contemporary fashion designers
(C) styles of the past often influence contemporary fashion designers
(D) contemporary fashion designers have often been influenced from styles of the past
(E) contemporary fashion designers are often influenced by styles of the past

11. Katarina could not be certain whether the voice she heard on the recording was her <u>uncle or someone else</u> who speaks with a heavy German accent.

(A) uncle or someone else
(B) uncle or that of someone else
(C) uncle's or someone else
(D) uncle's or that of someone else
(E) uncle's or someone else's

GO ON TO THE NEXT PAGE ⇨

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

Ⓐ ● Ⓒ Ⓓ Ⓔ

12. There is many industrial uses for copper because it is
    ‾‾‾‾   ‾‾‾
    A   B

an especially good conductor of both heat and
   ‾‾‾‾‾‾‾‾‾   ‾‾‾‾‾‾‾
   C   D

electricity. No error
             ‾‾‾‾‾‾‾
             E

13. Of the five films that Phuong saw during the
                                 ‾‾‾ ‾‾‾‾‾‾
                                 A   B

film festival, the last was unquestionably the
                        ‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾
                        C

more enjoyable. No error
‾‾‾‾‾‾‾‾‾‾‾‾   ‾‾‾‾‾‾‾
D   E

14. If not for bees, which are responsible for pollinating
                     ‾‾‾‾‾‾‾‾‾   ‾‾‾‾‾‾‾‾‾‾‾‾‾
                     A   B

the vast majority of Earth's flowers, many plants

were unable to produce fruits or seeds. No error
‾‾‾‾‾‾‾‾‾‾‾ ‾‾‾‾‾‾‾‾‾   ‾‾‾‾‾‾‾
C   D   E

15. From his smile it was evident that Burton had
    ‾‾‾‾   ‾‾
    A   B

successfully reached an agreement to be averting
‾‾‾‾‾‾‾‾‾‾‾   ‾‾‾‾‾‾‾‾‾‾‾
C   D

a strike. No error
          ‾‾‾‾‾‾‾
          E

16. Many people agree that the full artistic potential of
              ‾‾‾‾‾   ‾‾‾‾‾‾‾‾‾‾‾‾
              A   B

jazz was first realized in recordings made by Louis
               ‾‾‾‾‾‾‾‾
               C

Armstrong with the band known as the Hot Five.
                            ‾‾‾‾‾‾‾‾
                            D

No error
‾‾‾‾‾‾‾
E

17. Had I known that we would be walking the fifteen
    ‾‾‾   ‾‾‾‾‾‾‾‾‾   ‾‾‾‾‾‾‾‾‾‾‾
    A   B   C

blocks from the movie theater to the restaurant,

I would of worn more comfortable shoes. No error
       ‾‾‾   ‾‾‾‾‾‾‾
       D   E

18. One of the <u>good things about</u> using corn oil as
             A

automobile fuel <u>is</u> <u>that</u> it makes car exhaust
          B C

<u>smell</u> appealingly like french fries. <u>No error</u>
 D   E

19. In 1961 Rita Moreno <u>gained fame</u> and <u>won</u> an
               A   B

Academy Award <u>for her portraying</u> Anita in the film
                C

<u>adaptation of</u> the groundbreaking Broadway musical
  D

West Side Story. <u>No error</u>
            E

20. <u>According to</u> a recent study, the <u>domestication of</u>
    A   B

cats <u>had began</u> in the Middle East <u>over</u> 100,000 years
    C   D

ago. <u>No error</u>
     E

21. Saffron, one of the world's <u>most expensive</u> spices,
                  A

<u>has been used</u> as a fragrance, dye, medicine, and
 B

<u>to season food</u> <u>for more than</u> 3,000 years. <u>No error</u>
   C   D   E

22. As the price of petroleum rises and concern about the

environmental <u>effects of</u> petrochemicals <u>mounted</u>,
            A   B

the plastics industry <u>is racing</u> to create plastics not
                  C

<u>made from</u> petroleum. <u>No error</u>
  D   E

23. The <u>flavor of</u> a Meyer lemon, a fruit <u>native to</u> China,
     A   B

is sweeter and <u>less acidic than</u> that of a common
              C

lemon, and a Meyer lemon's skin <u>is edible</u>. <u>No error</u>
                      D   E

24. After his first week <u>on the job</u>, George realized that
                A

he <u>would need to</u> respond to customers' complaints
      B

<u>more tactful</u> than he had <u>so far</u>. <u>No error</u>
  C   D   E

25. <u>Thanks to</u> the strength <u>of</u> the bonds between <u>its</u>
    A   B   C

constituent carbon atoms, a diamond has exceptional

physical properties <u>that makes</u> it useful in a wide
              D

variety of industrial applications. <u>No error</u>
                        E

GO ON TO THE NEXT PAGE

26. The firefly, <u>which emits</u> its characteristic glow from
<center>A</center>

an area <u>under their</u> abdomen, <u>is able</u> to produce light
<center>B   C</center>

<u>with almost</u> no energy loss in the form of heat.
<center>D</center>

<u>No error</u>
<center>E</center>

27. Many environmentalists think <u>that it is</u> just as
<center>A</center>

important <u>to use</u> existing energy sources efficiently
<center>B</center>

<u>than</u> it is to develop pollution-free means
<center>C</center>

<u>of generating</u> energy. <u>No error</u>
<center>D   E</center>

28. The combination of the refined and the rudimentary

<u>were reflected</u> in the medieval castle, <u>where</u> rooms
<center>A   B</center>

<u>hung</u> with rich tapestries were poorly heated and
<center>C</center>

<u>furnished with</u> plain benches. <u>No error</u>
<center>D   E</center>

29. Spotting Kim and <u>I</u> looking at the giant pandas,
<center>A</center>

Brianna <u>carefully</u> maneuvered through the crowd
<center>B</center>

and squeezed <u>between us</u> to get a look <u>at them</u>
<center>C   D</center>

herself. <u>No error</u>
<center>E</center>

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) Play in young animals (including humans) is an appealing and quite mysterious behavior. (2) But unlike many other behaviors, play seems to be biologically purposeless and even disadvantageous. (3) They do not achieve an obvious life-serving goal, as they do in other behaviors such as finding food, mating, repelling intruders, and resting. (4) In fact, animals at play seem to expend a lot of energy for no useful purpose and risk hurting themselves, attracting predators, or otherwise decreasing their chances of survival. (5) There is the obvious explanation that play is inherently enjoyable, offering the intrinsic reward of pleasure. (6) But surely play must have some additional benefits that increase animals' survival chances and thus outweigh the risks incurred and the energy expended.

(7) Researchers believe that play may have evolved at least in part to enhance the ability of animals to adapt to novel situations. (8) Through play, animals gain knowledge of the properties of objects, sharpen their motor skills, and recognize and manipulate characteristics of their environment. (9) In my biology class recently, we read an interesting book of essays on the subject of animal play and its purposes. (10) Picture a young dolphin blowing air bubbles while underwater, and then chasing them in order to catch them in his mouth before they can reach the surface and vanish. (11) He is not content to repeat this amusing process endlessly. (12) So he will move closer and closer to the water's surface, forcing himself to work harder each time to catch the bubbles before they disappear. (13) It demonstrates creativity and the desire for increasingly challenging puzzles. (14) Thus it is consistent with the notion that play facilitates the development and maintenance of flexible problem-solving skills.

30. In context, which is the best version of the underlined portion of sentence 3 (reproduced below) ?

They do not achieve an obvious life-serving goal, as they do in other behaviors such as finding food, mating, repelling intruders, and resting.

  (A) (As it is now)
  (B) They are not achieving
  (C) Play does not help those animals achieve
  (D) In playing they do not achieve
  (E) When they play, animals do not achieve

31. Which of the following sentences would be best to insert between sentences 4 and 5 ?

  (A) Is play truly innate, or can it be taught?
  (B) Why, then, do young animals devote so much time to play?
  (C) Does the risk of injury seem small in comparison?
  (D) On the other hand, what do humans gain from this?
  (E) When did animal play first attract the interest of scientists?

32. In context, what revision to sentence 7 (reproduced below) would provide the best transition between the first and second paragraphs?

Researchers believe that play may have evolved at least in part to enhance the ability of animals to adapt to novel situations.

  (A) Insert "However," at the beginning of the sentence.
  (B) Change "Researchers" to "Indeed, researchers now".
  (C) Change "play" to "this behavior".
  (D) Delete "at least" from the sentence.
  (E) Change "novel" to "unforeseen".

33. In context, which is the best way to deal with sentence 9 (reproduced below) ?

In my biology class recently, we read an interesting book of essays on the subject of animal play and its purposes.

  (A) Insert "Additionally," at the beginning of the sentence.
  (B) Replace "we read" with "we have read".
  (C) Change "on the subject of" to "about".
  (D) Place it immediately after sentence 7.
  (E) Delete it from the passage.

34. In context, which of the following is the best way to revise and combine sentences 11 and 12 (reproduced below) at the underlined part?

He is not content to repeat this amusing process endlessly. So he will move closer and closer to the water's surface, forcing himself to work harder each time to catch the bubbles before they disappear.

  (A) He is not content to repeat this amusing process endlessly, therefore he will move
  (B) He was not content repeating this amusing process endlessly, so he moved
  (C) Not content to repeat this amusing process endlessly, the dolphin moves
  (D) The dolphin, not being content to repeat this amusing process endlessly, moving
  (E) Repeating this amusing process endlessly does not content the dolphin, so that moving

35. In context, which is the best version of the underlined portion of sentence 13 (reproduced below) ?

It demonstrates creativity and the desire for increasingly challenging puzzles.

  (A) (As it is now)
  (B) Such behavior
  (C) The dolphin then
  (D) In this way it
  (E) That example

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.**

SECTION 6
Time — 25 minutes
23 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.

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. According to his supervisor, Kenji was an inveterate -------: he habitually put off doing his work until the last minute.

(A) iconoclast   (B) connoisseur
(C) procrastinator   (D) protégé
(E) misanthrope

2. Although pre-Columbian jewelry often incorporated complex religious symbolism, its function was generally more ------- than -------.

(A) decorative . . devotional
(B) ritualistic . . utilitarian
(C) theological . . aesthetic
(D) pragmatic . . practical
(E) cosmetic . . conspicuous

3. Mayor Hardy remains ------- in her -------, refusing to adopt an expedient silence on controversial issues of social importance.

(A) circumspect . . fervor
(B) neutral . . ambition
(C) vocal . . equanimity
(D) firm . . outspokenness
(E) confident . . capriciousness

4. Unlike her predecessor's rambling prose, Susan Hubell's reports were both ------- and comprehensive.

(A) interminable   (B) complete
(C) intractable   (D) banal
(E) succinct

5. The sentimentality of Tom's screenplay was so extreme that it bordered on -------.

(A) rectitude   (B) opulence   (C) munificence
(D) mawkishness   (E) serendipity

GO ON TO THE NEXT PAGE

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

Questions 6-7 are based on the following passage.

For centuries oceanographers have snatched clues to ocean currents where they could. Early ideas about the speed and direction of currents often came from stray
Line objects that floated and drifted for years—sealed bottles,
5 rafts, the gloomy, waterlogged hulks of abandoned ships called derelicts. These days a host of ingenious instruments delivers intriguing news of the origins and routes of water. Perhaps the single most useful instrument for physical oceanographers is the CTD (conductivity-temperature-
10 depth) recorder, which measures the salinity and temperature of a particular mass of seawater at various depths. Identifying these properties is key to determining how, where, and when currents move.

6. As presented in the opening sentence, the task of the oceanographers is most similar to that of

   (A) lawyers presenting a case to a jury
   (B) explorers climbing a previously unscaled mountain
   (C) investigators trying to solve a mystery
   (D) doctors performing delicate surgery
   (E) researchers applying a new methodology

7. Lines 6-7 ("These days . . . water") serve primarily to

   (A) cite an authority
   (B) suggest an option
   (C) defend a position
   (D) provide a transition
   (E) offer a qualification

Questions 8-9 are based on the following passage.

Many professional musicians receive conservatory training in order to become well-grounded in formal theory and instrumental technique; however, when we approach
Line jazz we are entering quite a different sphere of training.
5 Here it is more meaningful to speak of apprenticeship, ordeals, initiation ceremonies, and rebirth. For after the jazz musician has learned the fundamentals of an instrument and the standard techniques of jazz, such as intonations and traditional styles, the musician must then find his or her
10 soul. All this through achieving that subtle identification between the instrument and the musician's deepest drives, which will allow for the expression of each artist's distinctive voice.

8. Which generalization about jazz training is most directly supported by the passage?

   (A) Its value is difficult to assess.
   (B) Its focus on formal technique is excessive.
   (C) It is a demanding process.
   (D) It should precede conservatory training.
   (E) It has been the source of much controversy.

9. Lines 10-13 ("All . . . voice") primarily emphasize which point about jazz?

   (A) Jazz is hard to define and varies greatly among performers.
   (B) Years of training are needed to hone a jazz musician's skills.
   (C) Listening to jazz has clinically therapeutic value.
   (D) Jazz performances are comparable to paintings and sculptures.
   (E) Playing jazz is a highly personal and creative activity.

Questions 10-15 are based on the following passage.

This passage is taken from the introduction to a 1987 sociological study of the use of nighttime hours.

We are good at inventing ways to enlarge our realm. Repeatedly we find methods of spreading farther. If an element is forbidding, we devise a means to master it.
Line Reaching the continental shores, we developed ship-
5 building and navigational skills in order to cross oceans. Shivering at arctic weather, we designed fur clothing and snug shelters in order to edge northward. And, having first occupied much of the usable space in the world, we are filling its usable time. Although being wakeful at night
10 flouted our natural rhythms, we developed artificial lighting that let us be active after dark.

An era is now under way in which we are replacing our cyclic community with activities that never stop. There is widespread factory shift work. Airports, gasoline stations,
15 hotels, restaurants, and broadcasters operate incessantly. Data-processing departments of insurance companies and banks are astir all night. Meanwhile, isolated individuals bend over books and papers on desks in their homes, watch television after midnight, or walk in the streets and listen to
20 the night breathe.

This extension across all hours of the day resembles our spreading across the face of the Earth. Look at both trends from enough perspective in distance and time and they appear alike. Hover far above the planet and watch it as it
25 spins throughout the eras. With the planet's surface in daylight, little human settlements can be seen to grow larger as the years go by and small extensions appear at their outskirts. Watch the surface when it is in night and at first some pinpoints of light flicker for a while and then go out.
30 After ages pass, those lights become stronger; they stay on longer, and other glimmerings appear nearby. Day and night, over thousands of years, reveal to us widening networks of human settlements and illumination being prolonged after dark. The surface is not uniformly occupied. The hours are
35 not uniformly lit. But both are advancing in order.

Both forms of expansion are frontiers. A frontier is a new source of resources that people use for subsistence or for profit. It is also a safety valve for people who feel confined. They disperse in response to pressures at home
40 and to appealing opportunities elsewhere.

Now, venturing into the night, we have the same motives as our predecessors who migrated geographically. The day-time is too crowded. Its carrying capacity is being strained, and still it does not yield all that the community wants. The
45 chance to exploit facilities that are left idle also arouses our initiative to use more of the night. Using the same space more of the time is a way to multiply its capacity. Some people dislike the commotion of the day and crave the serenity of night. Others look to it to better themselves
50 economically. It is no accident that personal motives for relief and opportunity are similar to the causes of expansion for the community as a whole. Those are the age-old forces behind all migrations.

10. The primary purpose of the passage is to

(A) persuade readers to increase their use of nighttime hours
(B) illustrate the vibrancy and beauty of nighttime activity
(C) argue that constant human activity is harmful to individuals and groups
(D) explore how the changing use of time is related to the history of human expansion
(E) critique the way in which changing labor patterns have come to dominate human life

11. In line 10, "rhythms" most nearly means

(A) accents
(B) migrations
(C) musical cadences
(D) poetic meters
(E) biological patterns

12. The examples the author cites in lines 13-17 ("There is . . . night") illustrate a blurring of

(A) space and time
(B) the uses of nighttime and of daytime
(C) solitude and companionship
(D) ambition and greed
(E) the purposes of work and of recreation

13. In context, the use of "Look," "Hover," and "Watch" (lines 22, 24, and 28) is intended to

(A) warn readers of the threat of unbounded migration
(B) encourage readers to explore the night skies
(C) invite readers to imagine human history visually
(D) promote the use of nighttime hours for work or leisure activities
(E) prepare readers to anticipate change and its consequences

14. In line 35, "both" most directly refers to

(A) worker productivity and national wealth
(B) scientific knowledge and individual well-being
(C) competing work demands and available time
(D) new national borders and unforeseen alliances
(E) inhabited space and usable time

15. Which of the following activities provides the best example of the "way to multiply" as discussed in the last paragraph?

(A) Conducting evening classes in public school buildings
(B) Increasing the number of night guards in a museum
(C) Adding more buildings to a factory complex
(D) Keeping municipal offices open during the lunch hour
(E) Enforcing curfew laws in residential neighborhoods

Questions 16-23 are based on the following passage.

This passage, adapted from a 1995 book about whales, was written by a biologist.

Conducting scientific research on this most challenging of groups can be compared to viewing a whale through a keyhole. The bulk of the animal glides past from time to
Line time while we try desperately to figure out what on earth
5 it is. In spite of lots of sparks and smoke, we have so far accomplished little more than a small enlargement of this keyhole. Someday—perhaps in the next hundred years— we may have a picture-window-sized keyhole and will finally see what the whole whale looks like. But even then
10 the enigma of the whale will stand, undecoded, before us.

I have been studying whales continuously since 1967. One of the delights of that experience has been discovering that there is no way to get a whale to adopt a human timescale. This is no more possible than it would be
15 for a human to adopt a weasel's speed of living. Whales are unhurriable. It's one of their most endearing traits. Nowhere is this more engagingly seen than in trying to figure out what a whale is doing when what you are watching is, for example, play, but you have not yet figured
20 that out. The difficulty comes from the fact that one of the major clues to the function of a behavior pattern is the rhythm of its occurrence. Because we commonly associate play with quick motions, the key to being able to recognize play in whales is learning to think differently—in terms
25 of long, slow rhythms, where things occur very lingeringly (it would be a comparable problem to learn to recognize play in snails, or sloths, or tortoises). To understand whales one must be deeply patient, must slow way down and be content to observe passively for a long time. Only at the
30 end of a day may one say to oneself, "Now let me see; what did I see? Well, I saw the whale do this . . . and then it did this . . . and then this . . . and then . . . For heaven's sake, it was *play* I was looking at." In order to observe whales, you must be willing to set your metronome on adagio[1]. Then,
35 to understand what you have seen, you must fast-forward through your observations by setting your metronome on allegro[2].

During the first ten years of my career in biology, I was an experimentalist. I worked in neurophysiology and
40 behavior and did experiments on how bats determine the direction from which sound is coming, how owls locate their prey in total darkness by hearing it, and how moths determine the direction from which a bat is approaching (so they can make evasive maneuvers to avoid it). When
45 I started studying whales—a group of species upon which it is all but impossible to experiment—I worried whether I would find the work stimulating enough or whether it would seem boring simply observing, without ever being able to manipulate anything or do an experiment. I had
50 enjoyed experimental work—at that time of my life I liked manipulating things—yet I had very little idea

of how to make good, passive field observations. But I soon appreciated the greater rewards of finding things out through passive observations. I soon realized that the
55 constraints posed by passive observation can be more challenging than those posed by experimental work. It is rather like the constraints of the sonnet form, which make composing poetry exquisitely challenging. Passive observation requires a subtler way of thinking, and
60 the result can be sonnets rather than ballads.

[1]at a slow tempo
[2]at a brisk lively tempo

16. The primary purpose of the passage is to

(A) report the recent findings of a scientist who does whale research
(B) describe one scientist's experience of working with whales
(C) discuss the ways in which whales are similar to other mammals
(D) highlight the dangers involved when conducting whale research
(E) reveal how a biologist became interested in whale research

17. In line 5, the phrase "sparks and smoke" primarily serves to suggest

(A) that unsuccessful endeavors are rare
(B) that a direct approach is futile
(C) that science can seem magical
(D) how vigorous the efforts have been
(E) how dangerous the work can be

18. The comment in lines 14-15 ("This . . . living") emphasizes that weasels differ significantly from humans in their

(A) size
(B) intelligence
(C) eating habits
(D) body shape
(E) pace of activity

19. In lines 17-33 ("Nowhere is . . . looking at' "), the author treats play as

(A) behavior found in many species but in forms that defy comparison between species
(B) a characteristically human behavior that is surprising to find in animals like whales
(C) apparently purposeless behavior that may nevertheless serve an important function
(D) a type of behavior that in certain species may not initially be seen for what it is
(E) an important behavioral clue to the intelligence and social organization of a species

20. In lines 29-33 ("Only . . . looking at' "), the author makes a point by

(A) inviting an authoritative second opinion
(B) suggesting a likely train of thought
(C) displaying an erroneous pattern of reasoning
(D) using humor to undermine an alternative view
(E) presenting part of an actual conversation

21. The last paragraph (lines 38–60) describes all of the following EXCEPT

(A) the author's motivation for choosing whales as a subject for research
(B) the author's concern about having the ability to conduct a different type of research
(C) the satisfaction the author found in the methods of whale research
(D) the change in methodology that working with whales required of the author
(E) the research the author did before turning to the study of whales

22. The reference to "the sonnet form" (line 57) primarily serves to

(A) illustrate how conciseness can enhance communication
(B) show the advantages and disadvantages of a type of scientific observation
(C) emphasize the need to discard outmoded constraints
(D) suggest a contrast between rigor in science and rigor in the arts
(E) convey a sense of appreciation for an apparent limitation

23. The author's writing style is best characterized as displaying

(A) a tendency to personify animals and inanimate objects
(B) a facility for explaining technical language in everyday terms
(C) a preference for philosophical reflections over scientific accuracy
(D) an effective use of rhetorical questioning
(E) an inclination to use metaphor and analogy in explanations

STOP

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

SECTION 7
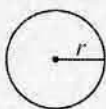### Time — 25 minutes
18 Questions

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

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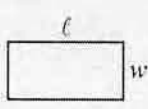
Notes

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.
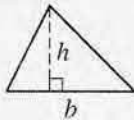
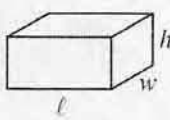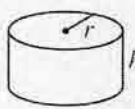Reference Information

$A = \pi r^2$
$C = 2\pi r$

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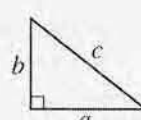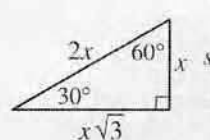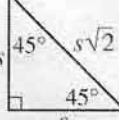
$A = \frac{1}{2}bh$

$V = \ell wh$

$V = \pi r^2 h$

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

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. If multiplying k by 7 gives the same result as squaring k, which of the following must be true?

(A) $7 + k = k^2$

(B) $k^2 + k = 7$

(C) $k^2 + 7k = 1$

(D) $7k = 1$

(E) $7k = k^2$

2. Mary earns \$50 per week, after taxes, working part-time at a hardware store. Her weekly budget allots \$14 for paying back a loan, \$16 for miscellaneous expenses, and the rest for savings. Based on this budget, what is the fewest number of weeks that it will take her to save \$450 ?

(A) 9
(B) 15
(C) 18
(D) 23
(E) 29

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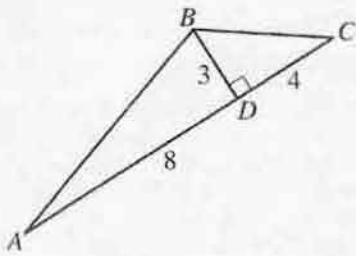
3. What is the area of $\triangle ABC$ above?

(A) 12
(B) 15
(C) 18
(D) 24
(E) 36

4. On the number line above, which has equally spaced tick marks, k could be equivalent to which of the following fractions?

(A) $\dfrac{3}{2}$

(B) $\dfrac{4}{3}$

(C) $\dfrac{5}{4}$

(D) $\dfrac{6}{5}$

(E) $\dfrac{7}{6}$

PEN SALES
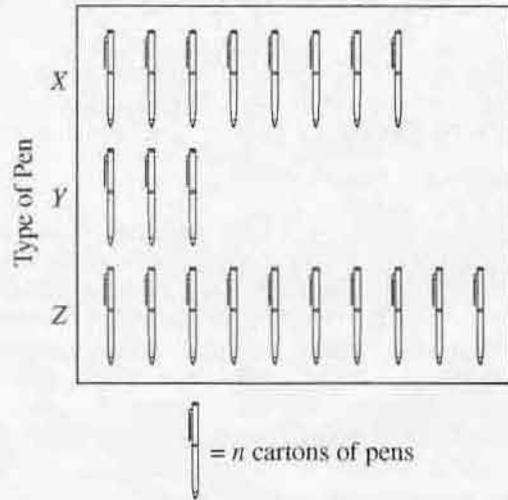
$\text{\bigg|} = n$ cartons of pens

5. The pictograph above shows the number of cartons of three types of pens—X, Y, and Z—that were sold by an office supply company. The company sold 2,000 more cartons of type X pens than type Y pens. How many cartons of type Z pens did the company sell?

(A)   800
(B) 2,000
(C) 2,500
(D) 4,000
(E) 5,000
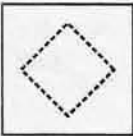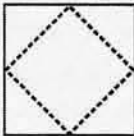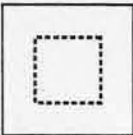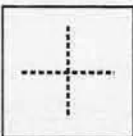
6. If $\dfrac{3b}{2c} = \dfrac{9}{5}$, what is the value of $\dfrac{9b}{6c}$?

(A) $\dfrac{3}{5}$

(B) $\dfrac{3}{2}$

(C) $\dfrac{9}{5}$

(D) $\dfrac{9}{2}$

(E) $\dfrac{27}{5}$

GO ON TO THE NEXT PAGE
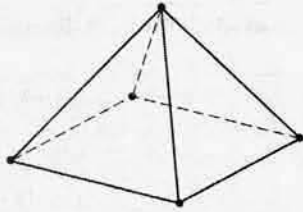
7. The figure above is a pyramid with a square base and four equilateral, triangular faces. Points P, Q, R, and S (not shown) are the midpoints of the edges that are not in the plane of the base. Dashed line segments are to be drawn on the triangular faces such that each segment connects two of these points. Which of the following is a representation of how these dashed line segments could appear if viewed through the square base?

(A)

(B)

(C)

(D)

(E)
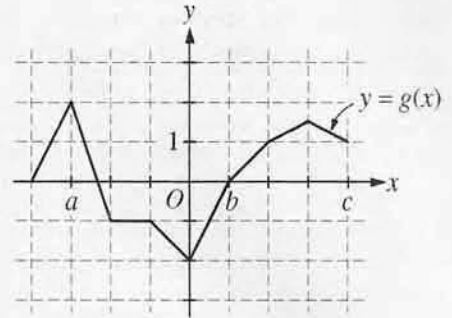
8. The figure above shows part of the graph of the function g in the xy-plane. Which of the following are true?

I. $g(b) = 0$

II. $g(a) > g(c)$

III. $g(a) + g(0) = 0$

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

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: $\frac{7}{12}$

Answer: 2.5

Answer: 201
Either position is correct.

Write answer in boxes.

← Fraction line

← Decimal point

Grid in result.

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

- Mark no more than one circle in any column.

- Because the answer sheet will be machine-scored, **you will receive credit only if the circles are filled in correctly.**

- Although not required, it is suggested that you write your answer in the boxes at the top of the columns to help you fill in the circles accurately.

- Some problems may have more than one correct answer. In such cases, grid only one answer.

- No question has a negative answer.

- **Mixed numbers** such as $3\frac{1}{2}$ must be gridded as

  3.5 or 7/2. (If [3|1|/|2] is gridded, it will be

  interpreted as $\frac{31}{2}$, not $3\frac{1}{2}$.)

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

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

8, 21, . . .

10. The first term of the sequence above is 8. Each term after the first term is 5 more than twice the term immediately preceding it. What is the sum of the first four terms of the sequence?

Note: Item not included for scoring.

11. Michael ran 5.5 miles each day for the first 5 of 6 days. How many miles must he run on the sixth day so that his average (arithmetic mean) for the 6 days will be 6.0 miles per day?

12. A right angle is divided into three nonoverlapping angles whose measures are $2x°$, $3x°$, and $5x°$. What is the value of x ?

13. In Lewiston, 4 out of every 7 registered voters voted in the last election. If a total of 2000 votes were cast, what was the number of registered voters in Lewiston at the time of the last election?
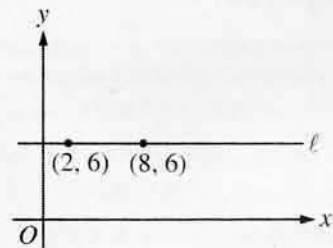
14. In the figure above, line ℓ has equation $y = mx + b$, where m and b are constants. What is the value of mb ?

GO ON TO THE NEXT PAGE

15. If $4x + 8y - 8 = 10$, what is the value of $x + 2y$?

17. The positive number n is the product of three different prime numbers greater than 2. If the sum of these three prime numbers is also prime, what is the smallest possible value for n ?
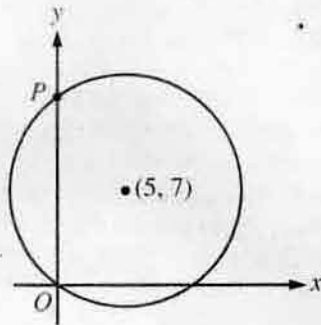
16. The circle in the xy-plane above has center $(5, 7)$ and intersects the y-axis at the origin and at point P. What is the y-coordinate of P ?

18. A grocery customer spent a total of $9.60 for ground beef and coffee. The coffee cost 2 times as much per pound as the ground beef, and the customer bought 3 times as many pounds of ground beef as pounds of coffee. How much, in dollars, did the customer spend on coffee? (Disregard the $ sign when gridding your answer. If, for example, your answer is $1.37, grid 1.37)

STOP

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

SECTION 8
Time — 20 minutes
19 Questions

Turn to Section 8 (page 7) of your answer sheet to answer the questions in this section.

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

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

Example:

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

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

Ⓐ Ⓑ Ⓒ Ⓓ ●

1. Honey, which has antibacterial properties, is commonly used in traditional medicine as a balm to ------- painful wounds.

   (A) enhance   (B) clarify   (C) fortify
   (D) soothe   (E) induce

2. The biographer now displays greater ------- in her work: she explores the feelings and motives of her subjects with deeper insight than she once did.

   (A) impatience   (B) puzzlement   (C) empathy
   (D) entertainment   (E) suspense

3. The ability to cram computer circuitry onto silicon chips faces fundamental limitations: it is possible to make the innards of a circuit so ------- that they no longer -------.

   (A) flexible . . bend
   (B) small . . function
   (C) desirable . . sell
   (D) successful . . work
   (E) complex . . break

4. Citing irrefutable evidence of corruption, the investigating committee ------- the senator for his -------.

   (A) castigated . . misconduct
   (B) exonerated . . propriety
   (C) censured . . veracity
   (D) eulogized . . dishonesty
   (E) denounced . . rectitude

5. Astronomer Heidi Hammel, a proponent of science education, conveys a passion for planetary science that her enraptured audiences find -------.

   (A) duplicitous   (B) infectious   (C) timorous
   (D) equivocal   (E) archaic

6. Joe claimed always to be ------- in a crisis, but Kameko insisted that he was, on the contrary, easily -------.

   (A) overwrought . . undone
   (B) flustered . . nonplussed
   (C) composed . . consoled
   (D) imperturbable . . ruffled
   (E) unflappable . . becalmed

GO ON TO THE NEXT PAGE

-36-

The two passages below are followed by questions based on their content and on the relationship between the two 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 7-19 are based on the following passages.

The passages below discuss a type of Paleolithic art, cave paintings created between approximately 33,000 and 9000 B.C.E. Passage 1 is adapted from a 2006 book by a journalist. Passage 2 presents the ideas of an authority on Paleolithic cave images.

Passage 1

There is still no grand theory of what the ancient paintings of animals on the cave walls mean. That is frustrating for scientists and amateurs alike, since as works of art the paintings communicate directly and supremely
Line well. The cave painters may or may not have had the idea
5 of art as we understand it, but when they chose to draw an appealing line instead of an awkward one, to create paintings that had graceful lines, subtle color, and precise perspective, they were thinking and acting like artists trying
10 to create art in our sense of the word. That's why it is valid for us to respond to cave paintings as art and not merely as archaeological evidence, although they are certainly that as well. Often reproduced in textbooks as the beginnings of Western art, animal cave paintings—the multicolored and
15 stylized horses, the pride of hunting lions with their eyes ablaze, the weighty yet delicately curving bison—all prove that beauty is truly eternal.

And that beauty is amplified because, against all logic, the paintings seem familiar as well, close to us in time
20 despite being as far from us in time as any art could possibly be. How is it that they could be locked away in caves, unknown or misunderstood, for eons and yet, once discovered, fit naturally in the Western cultural tradition? The immediacy of the paintings, despite their great
25 antiquity and mysteriousness, powerfully affects everyone who sees them.

After their beauty, the first thing everyone notices about the cave paintings is that they are repetitive. The same animals in the same or similar poses appear again and again
30 in cave after cave, regardless of the date of the paintings. Each species is painted according to convention. The conventions change somewhat over time, but still they are there. This consistency means that the art in caves is fundamentally conservative. In modern times we almost
35 demand that art attack the social order or mock it or undermine it in some way, and our art changes as the times change. Yet cave art, which is unvarying, must have been a stalwart support of the social order. It sustained society's beliefs by painting them as unfailing, constant, ever and
40 always the same. And in its role as protector of society and its institutions, the art was spectacularly successful.

Passage 2

R. Dale Guthrie, a retired professor of zoology at the University of Alaska, is both a professional expert in the large mammals that cavort on the cave walls and a personal
45 enthusiast who has spent 40 years in the Arctic wild tracking and studying their descendants. *The Nature of Paleolithic Art*, his exhaustive work published in 2005, is nothing less than a labor of love growing out of half a lifetime of experience with wildlife in the far north and
50 two decades of examining most of the thousands of images that make up the entire collection of Paleolithic art.

In general, Guthrie views Paleolithic cave imagery as an immensely valuable archive for natural history, and he brings more empiricism to his work than do many other
55 experts. His forensic analyses of fossil handprints in the caves, coupled with his knowledge of animal behavior and hunting, leads him to hypothesize that many of the ancient cave artists were not the Michelangelos of their time, as most art historians have assumed. Instead, many cave
60 artists were teenagers who, too young to hunt but nonetheless fascinated by wildlife, were free to venture into the caves and create hasty, impish doodles "with overlapping, incomplete, and often askew imagery." These unskilled drawings, according to Guthrie, are rarely
65 reproduced in art books. However, the artists must have been keen observers of the natural world, Guthrie believes: their depiction of animal forms on rock surfaces seems both easy and automatic.

Guthrie's theories are not likely to be accepted by the
70 many scholars who study cave art as the key to unlocking the mysteries of the Paleolithic symbolic worldview. But should Guthrie's views devalue the artistic power of Paleolithic cave art for the rest of us? Guthrie believes not. For him, the possibility that "adolescent giggles may have
75 echoed in dark cave passages demeans neither artists nor art. Instead, it opens the possibility for us to conceive, with familiar warmth and greater immediacy, the entire range of preserved Paleolithic art." Art allows us to experience the world as richer and more meaningful than it otherwise
80 would seem. It has been said that no one who studies the cave paintings is able to resist a yearning for communion with their creators. The identity of those creators is ultimately less significant than our emotional reaction to the power of their art.

GO ON TO THE NEXT PAGE

7. The general topic of both passages is the

(A) development of an innovative artistic technique
(B) creation and significance of a body of art
(C) work of a controversial art historian
(D) scientific analysis of ancient animal paintings
(E) practical role of artists in ancient societies

8. The authors of both passages would likely agree that many people find cave art to be

(A) intellectually sophisticated
(B) artistically simplistic
(C) thematically complex
(D) evocative and moving
(E) accessible and soothing

9. Guthrie (Passage 2) would most likely respond to the claim in lines 5-10 in Passage 1 ("The cave . . . word") with

(A) excitement, since it illustrates the artistic importance of cave paintings
(B) annoyance, since it neglects to consider the historical impact of cave paintings
(C) bafflement, since it contradicts established theories about cave paintings
(D) irritation, since it implies that cave paintings are not useful to scholars of natural history
(E) doubt, since it overestimates the artistry of many cave paintings

10. The tone of lines 13-17 ("Often . . . eternal") is best described as

(A) incredulous
(B) nostalgic
(C) bemused
(D) mirthful
(E) reverent

11. Guthrie (Passage 2) would most likely view the "animal cave paintings" mentioned in line 14, Passage 1, as

(A) useful data for natural historians
(B) early attempts by accomplished artists
(C) compelling evidence for art historians
(D) symbolic images intended for mysterious rituals
(E) familiar illustrations of an artistic technique

12. In lines 21-23 ("How is . . . tradition?"), the author of Passage 1 uses a question to

(A) offer a proposal
(B) suggest an alternative
(C) underscore an impulse
(D) emphasize a paradox
(E) criticize a process

13. In lines 37-40 ("Yet . . . same"), the author of Passage 1 argues that cave art

(A) reinforced the values of a traditional society
(B) undermined the ideas of an innovative group
(C) indicated the presence of a cosmopolitan culture
(D) challenged a conventional form of ancient art
(E) represented the loss of a progressive community

14. The information presented in lines 42-51 ("R. Dale . . . art") supports the overall argument of Passage 2 by establishing Guthrie's

(A) cooperation
(B) ingenuity
(C) credibility
(D) motivation
(E) celebrity

15. As characterized in Passage 2, "most art historians" (line 59) would probably suggest that the paintings described in lines 13-17, Passage 1 ("Often . . . eternal"), are

(A) important testimony to the diversity of Paleolithic society
(B) representative examples of the work created by gifted Paleolithic artists
(C) proof that aesthetic standards are always changing
(D) models for subsequent generations of artists
(E) evidence of the difference between ancient and modern art

16. In Guthrie's opinion, the work produced by "many cave artists" (lines 59-60) was

(A) intentionally provocative
(B) artistically intricate
(C) bitingly satiric
(D) playfully careless
(E) overly reflective

GO ON TO THE NEXT PAGE

17. How would the "many scholars" (line 70, Passage 2) most likely react to the search for the "grand theory" (line 1, Passage 1) ?

(A) With sympathy, because these scholars too are attempting to understand the overarching meaning of Paleolithic art

(B) With frustration, because these scholars believe that the meaning of Paleolithic art is already understood

(C) With irritation, because these scholars do not believe that amateurs should engage in the study of Paleolithic art

(D) With delight, because these scholars are convinced that Paleolithic art provides the key to comprehending natural history

(E) With astonishment, because these scholars had not realized the number of people interested in analyzing Paleolithic art

18. The author of Passage 1 would most likely respond to lines 82-84, Passage 2 ("The identity . . . art"), with

(A) unconcealed impatience
(B) calm indifference
(C) mild skepticism
(D) cautious acceptance
(E) general agreement

19. Compared to Guthrie (Passage 2), the author of Passage 1 focuses more on which aspect of cave art?

(A) Its historical significance
(B) Its ongoing influence
(C) Its aesthetic power
(D) The diversity of its content
(E) The date of its creation

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

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

$A = \pi r^2$
$C = 2\pi r$
$A = \ell w$
$A = \frac{1}{2}bh$
$V = \ell w h$
$V = \pi r^2 h$
$c^2 = a^2 + b^2$
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. Six friends sit at a rectangular table in the arrangement shown above, with Tom sitting in seat T. Kim cannot sit next to Tom or directly opposite him. In how many different seats can Kim sit?

(A) None
(B) One
(C) Two
(D) Three
(E) Four

2. If $x = 3y$ and $w = 3$, what is the value of $wy - x$?

(A) 0
(B) 1
(C) 3
(D) 6
(E) 9

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3. Mr. Hampton has an 8-foot-tall oak tree in his backyard. If the tree will grow n feet in height each year, which of the following represents the height of the tree, in feet, 4 years from now?

(A) $8 + n$

(B) $8 + 4n$

(C) $8(4n)$

(D) $8n$

(E) $4n$

4. In the figure above, the length of $\overline{AC}$ is 20 and the length of $\overline{AB}$ is $\frac{3}{5}$ the length of $\overline{AC}$. What is the length of $\overline{BC}$?

(A) 6
(B) 8
(C) 12
(D) 14
(E) 16
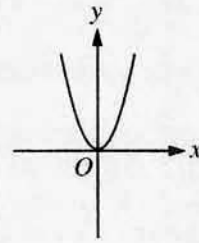
5. Which of the following shows the result of reflecting the graph above about the x-axis?

(A)

(B)

(C)

(D)

(E)

GO ON TO THE NEXT PAGE
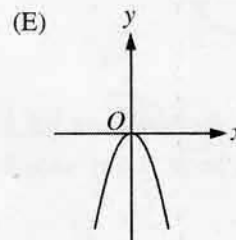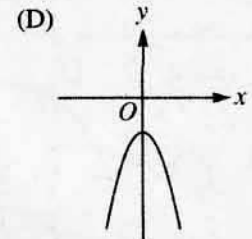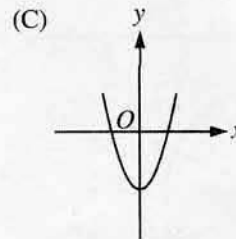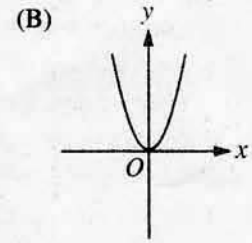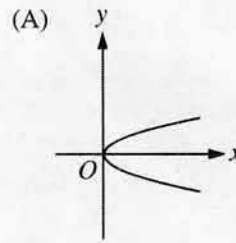
$$3a + 7 = 4b - 3$$

6. Each of the following is equivalent to the equation above EXCEPT

(A) $3a = 4b + 10$
(B) $3a + 10 = 4b$
(C) $3a + 3 = 4b - 7$
(D) $10 = 4b - 3a$
(E) $3a - 4b = -10$
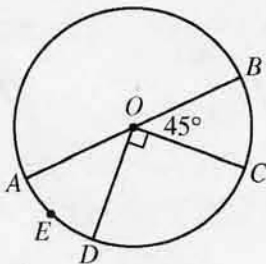
7. In the circle above, point O is the center and $\overline{AB}$ is a diameter. If the length of arc $\overset{\frown}{ACB}$ is 4π, what is the length of arc $\overset{\frown}{AED}$?

(A) π

(B) $\dfrac{3\pi}{2}$

(C) 2π

(D) $\dfrac{5\pi}{2}$

(E) 3π

CELL PHONE OWNERSHIP IN THE UNITED STATES

8. The number of people in the United States, in millions, who owned a cell phone at the end of each year from 1996 through 2002 is shown in the line graph above. If the population of the United States at the end of 2000 was approximately 280 million, which of the following is closest to the percent of the population that owned a cell phone at the end of 2000 ?

(A) 45%
(B) 40%
(C) 35%
(D) 30%
(E) 25%

GO ON TO THE NEXT PAGE

9. If a square has a side of length $x + 4$ and a diagonal of length $x + 8$, what is the value of x ?

(A) 4

(B) 8

(C) 16

(D) $4\sqrt{2}$

(E) $8\sqrt{2}$

10. In the Venn diagram above, $A = \{1, 2, 3, 4\}$ and $B = \{2, 4, 6, 8, 10\}$. How many integers are represented by the shaded region of the diagram?

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

11. In the figure above, the three triangles are similar. What is the value of $x + y + z$?

(A) 140
(B) 180
(C) 210
(D) 240
(E) 270

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12. If the ideal length of an item is L centimeters and the actual length of the item is A centimeters, then the error, in centimeters, is given by $|A - L|$. Which of the following could be the actual length, in centimeters, of a bolt with an ideal length of 8.1 centimeters and with an error of less than 0.01 centimeter?

(A) 8.105
(B) 8.111
(C) 8.12
(D) 8.20
(E) 8.22

13. The x- and y-coordinates of point P are each to be chosen at random from the set of integers 1 through 10. What is the probability that P will be in quadrant II ?

(A)   0

(B) $\dfrac{1}{100}$

(C) $\dfrac{1}{10}$

(D) $\dfrac{1}{4}$

(E) $\dfrac{1}{2}$

14. A list consists of 14 consecutive positive integers. Which of the following could be the number of integers in the list that are divisible by 13 ?

     I. None
     II. One
     III. Two

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

GO ON TO THE NEXT PAGE

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15. For all x, let the function f be defined by $f(x) = a(x - h)^2 + k$, where a, h, and k are constants. If a and k are positive, which of the following CANNOT be true?

(A) $f(10) = 1$
(B) $f(0) = -5$
(C) $f(0) = 5$
(D) $f(1) = -h$
(E) $f(-1) = h$

16. For any cube, if the volume is V cubic inches and the surface area is A square inches, then V is directly proportional to which of the following?

(A) A

(B) A^2

(C) A^3

(D) $A^{\frac{2}{3}}$

(E) $A^{\frac{3}{2}}$

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

Ⓐ ● Ⓒ Ⓓ Ⓔ

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1. Though Douglas Engelbart designed and built the first computer mouse, he profited little from his invention because it does not become popular until his patent had already expired.

   (A) it does not become
   (B) it did not become
   (C) of them not becoming
   (D) of their not becoming
   (E) they had not become

2. Most famous for her record-breaking trip around the world, Nellie Bly (1864-1922) also pioneered a new type of undercover investigative journalism and inventing a type of steel barrel.

   (A) inventing a type of steel barrel
   (B) invents a type of steel barrel
   (C) invented a type of steel barrel
   (D) a type of steel barrel was invented by her
   (E) a type of steel barrel was also her invention

3. To encourage young people to read, a number of authors, who sell their books with companion video games that require players to use information from the books to advance in the games.

   (A) authors, who sell
   (B) authors, they sell
   (C) authors, having sold
   (D) authors selling
   (E) authors are selling

4. The discovery of geysers erupting from the floors of several oceans convinced scientists that hydrothermal vents exist around the world rather than only in the Pacific basin, which is where they thought previously.

   (A) basin, which is where they thought previously
   (B) basin, not as they have thought
   (C) basin as they had previously thought
   (D) basin that they used to think
   (E) basin as one previously thought

5. <u>A structure large enough to be seen from outer space, workers moved massive stone blocks to create China's Great Wall, which spans thousands of miles.</u>

(A) A structure large enough to be seen from outer space, workers moved massive stone blocks to create China's Great Wall, which spans thousands of miles.

(B) A structure large enough to be seen from outer space and created by workers moving massive stone blocks is China's Great Wall, it spans thousands of miles.

(C) Created by workers moving massive stone blocks, China's Great Wall spans thousands of miles and is large enough to be seen from outer space.

(D) China's Great Wall, a structure large enough to be seen from outer space, spans thousands of miles, was created by workers moving massive stone blocks.

(E) Spanning thousands of miles and it is large enough to be seen from outer space, workers moved massive stone blocks to create China's Great Wall.

6. Unlike other kinds of hearing aids, which work by amplifying sound, the cochlear <u>implant, which they often call</u> a bionic ear, works by directly stimulating functioning auditory nerves with electrical impulses.

(A) implant, which they often call
(B) implant, which are often called
(C) implant is often called
(D) implant, often called
(E) implant, often they call it

7. An otter grooms its fur continually, <u>and their claws are used by them</u> to remove debris.

(A) and their claws are used by them
(B) their claws are used
(C) it uses its claws
(D) using its claws
(E) using their claws

8. The Basque language is not closely related to any other language in the world, <u>its origins therefore cannot be determined by scholars</u>.

(A) its origins therefore cannot be determined by scholars
(B) therefore determining its origins cannot be done by scholars
(C) and therefore scholars cannot determine its origins
(D) and scholars therefore not determining its origins
(E) scholars therefore not determining its origins

9. The television show *Soul Train* reached the height of its popularity in the 1970s and 1980s, <u>it was showcasing</u> the latest songs by outstanding rhythm-and-blues, soul, and hip-hop artists.

(A) it was showcasing
(B) showcasing
(C) it showcased
(D) when it showcases
(E) when they showcased

10. In 1912 the mayor of Tokyo gave thousands of cherry trees to the city of Washington, D.C., <u>which holds the annual</u> National Cherry Blossom Festival every year to commemorate this gift.

(A) which holds the annual
(B) which annually holds the
(C) which holds the
(D) holding the annual
(E) and they hold the

GO ON TO THE NEXT PAGE ▷

11. Just as sprinting requires speed, so <u>running a marathon requires endurance</u>.

    (A) running a marathon requires endurance
    (B) marathon runners require endurance
    (C) endurance is required to run a marathon
    (D) endurance is required when running a marathon
    (E) it requires endurance running a marathon

12. The bristlecone pine has a maximum life span of about 5,000 years, <u>which is much longer than</u> almost any other tree.

    (A) which is much longer than
    (B) and this is much longer than
    (C) it is much longer than that of
    (D) much longer than that of
    (E) much the longest of

13. Bridget worried that she might not be able to bring back many souvenirs <u>were she to take</u> only one suitcase on vacation.

    (A) were she to take
    (B) if she would have taken
    (C) was she to have taken
    (D) had she took
    (E) by having taken

14. When I learned that both events were scheduled for the same evening, I found it difficult to choose between going to the basketball game <u>or attend</u> the rock concert.

    (A) or attend
    (B) or to attend
    (C) or attending
    (D) and attending
    (E) and to attend

STOP

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

Correct Answers and Difficulty Levels
Form Codes AEHC, BWHC, CFHC

Critical Reading

	Section 3				Section 6				Section 8		
	COR. ANS.	DIFF. LEV.		COR. ANS.	DIFF. LEV.		COR. ANS.	DIFF. LEV.		COR. ANS.	DIFF. LEV.
1.	B	1	14. D 1	1.	C	1	13. C 3	1.	D	1	11. A 4
2.	D	1	15. C 3	2.	A	2	14. E 3	2.	C	2	12. D 3
3.	B	3	16. B 2	3.	D	3	15. A 3	3.	B	3	13. A 3
4.	C	4	17. C 3	4.	E	5	16. B 3	4.	A	3	14. C 2
5.	D	4	18. C 4	5.	D	5	17. D 3	5.	B	3	15. B 4
6.	D	4	19. B 2	6.	C	1	18. E 1	6.	D	3	16. D 3
7.	C	5	20. E 1	7.	D	2	19. D 3	7.	B	5	17. A 4
8.	C	5	21. C 4	8.	C	5	20. B 3	8.	D	5	18. E 5
9.	D	2	22. C 2	9.	E	3	21. A 3	9.	E	3	19. C 4
10.	D	2	23. B 3	10.	D	3	22. E 4	10.	E	5	
11.	A	3	24. A 2	11.	E	1	23. E 4				
12.	B	3	25. E 3	12.	B	3					
13.	A	3									

Number correct _____   Number correct _____   Number correct _____

Number incorrect _____   Number incorrect _____   Number incorrect _____

Mathematics

	Section 4					Section 7						Section 9		
	COR. ANS.	DIFF. LEV.		COR. ANS.	DIFF. LEV.	**Multiple-Choice Questions** COR. ANS.	DIFF. LEV.	**Student-Produced Response Questions** COR. ANS.	DIFF. LEV.			COR. ANS.	DIFF. LEV.	
1.	D	1	11. C 3			1. E 1		9. †			1.	C	1	9. D 4
2.	B	1	12. D 3			2. D 1		10. 175	2		2.	A	2	10. C 3
3.	A	1	13. D 3			3. C 2		11. 8.5,17/2	2		3.	B	1	11. D 3
4.	D	1	14. E 3			4. B 2		12. 9	3		4.	B	2	12. A 3
5.	E	2	15. B 3			5. D 2		13. 3500	3		5.	E	2	13. A 4
6.	B	2	16. A 4			6. C 3		14. 0	3		6.	A	2	14. D 4
7.	E	2	17. B 4			7. C 5		15. 4.5,9/2	3		7.	A	3	15. B 4
8.	C	3	18. A 4			8. E 4		16. 14	3		8.	B	3	16. E 5
9.	C	2	19. B 5					17. 165	5					
10.	D	3	20. E 5					18. 3.84	4					

Number correct _____   Number correct _____   Number correct (9-18) _____   Number correct _____

Number incorrect _____   Number incorrect _____   Number incorrect _____

Writing Multiple-Choice

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

Number correct _____   Number correct _____

Number incorrect _____   Number incorrect _____

† Question dropped

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

The Scoring Process

1. **Scanning.** Your answer sheet is scanned electronically, and the circle you filled in for each question is recorded in a computer file.

2. **Scoring.** The computer compares the circle filled in for each question with the correct response.

   - Each correct answer receives one point.

   - Omitted questions do not count toward your score.

   - One-fourth of a point is subtracted for each wrong answer to multiple-choice questions. No points are subtracted for wrong answers to the student-produced response mathematics questions.

     Example:

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

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

   - If the raw score is a fractional number, it is rounded to the nearest whole number. For example, a raw score of 36.25 is rounded to 36, the nearest whole number. A raw score of 36.50 is rounded upward to 37.

3. **Essay scoring.** Using the scoring guide shown on page 51, specially trained high school and college teachers score the essay. Each essay is read independently by two readers who rate it on a scale of 1 to 6. (If the two scores differ by more than one point, a third reader scores the essay.) The two readers' scores are added together, and the essay subscore is reported on a scale of 2 to 12. The essay section is worth approximately 30 percent of the raw score, and the multiple-choice writing section counts for approximately 70 percent.

4. **Converting raw scores to scaled scores.** Raw scores are then placed on the scale of 200–800 through a process that adjusts scores to account for minor differences in difficulty among different editions of the test. This process, known as equating, is performed so that a student's reported score is not affected by the edition of the test taken or by the abilities of the group with whom the student takes the test. As a result of placing SAT scores on the College Board scale, scores earned by students at different times can be compared. For example, an SAT mathematics score of 400 on a test taken at one administration indicates the same level of developed mathematics ability as a 400 score obtained on a different edition of the test taken at another time.

SAT Score Conversion Table
Form Codes AEHC, BWHC, CFHC

Raw Score	Critical Reading Scaled Score	Math Scaled Score	Writing Multiple-Choice Scaled Score	Raw Score	Critical Reading Scaled Score	Math Scaled Score	Writing Multiple-Choice Scaled Score
67	800			31	500	550	54
66	800			30	490	540	53
65	800			29	490	530	52
64	800			28	480	530	51
63	780			27	470	520	50
62	760			26	470	510	49
61	750			25	460	500	48
60	730			24	460	490	47
59	720			23	450	490	46
58	710			22	440	480	45
57	700			21	440	470	44
56	690			20	430	460	44
55	680			19	420	460	43
54	670			18	410	450	42
53	660	800		17	410	440	41
52	650	790		16	400	430	40
51	640	760		15	390	420	39
50	630	740		14	390	420	39
49	620	720	80	13	380	410	38
48	620	710	79	12	370	400	37
47	610	700	76	11	360	390	36
46	600	680	74	10	360	380	35
45	590	670	72	9	350	370	34
44	590	660	70	8	340	360	33
43	580	650	68	7	330	350	32
42	570	640	67	6	320	340	31
41	570	640	65	5	310	330	30
40	560	630	64	4	300	320	29
39	550	620	63	3	290	300	28
38	550	610	61	2	270	290	26
37	540	600	60	1	260	270	25
36	530	590	59	0	240	260	23
35	530	580	58	-1	220	240	21
34	520	570	57	-2	200	220	20
33	510	570	56	-3	200	200	20
32	510	560	55	and below			

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

SAT Writing Composite Score Conversion Table
Form Code AEHC

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

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

SAT Writing Composite Score Conversion Table
Form Code BWHC

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

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