

READING TEST

65 MINUTES, 52 QUESTIONS

Turn to Section 1 of your answer sheet to answer the questions in this section.

Directions: Following each of the passages (or pairs of passages) below are questions about the passage (or passages). Read each passage carefully. Then, select the best answer for each question based on what is stated in the passage (or passages) and in any graphics that may accompany the passage.

Questions 1–11 are based on the following passage.

The following passage is an excerpt from Henry James's short story "The Pupil." In this section, Pemberton, the young British tutor, describes some of the hasty trips around Europe during which he came to know his pupil, Morgan Moreen, and Morgan's family.

A year after he had come to live with them Mr. and Mrs. Moreen suddenly gave up the villa at Nice. Pemberton had got used
 Line to suddenness, having seen it practiced on
 (5) a considerable scale during two jerky little tours—one in Switzerland the first summer, and the other late in the winter, when they all ran down to Florence and then, at the end of ten days, liking it much less than they
 (10) had intended, straggled back in mysterious depression. They had returned to Nice "for ever," as they said; but this didn't prevent their squeezing, one rainy muggy May night, into a second-class railway-carriage—you
 (15) could never tell by which class they would travel—where Pemberton helped them to stow away a wonderful collection of bundles and bags. The explanation of this maneuver was that they had determined to spend the
 (20) summer "in some bracing place"; but in Paris they dropped into a small furnished

apartment—a fourth floor in a third-rate avenue, where there was a smell on the staircase and the *portier*¹ was hateful—

(25) and passed the next four months in blank indigence.

The better part of this forced temporary stay belonged to the tutor and his pupil, who, visiting the Invalides² and Notre Dame, the
 (30) Conciergerie and all the museums, took a hundred rewarding rambles. They learned to know their Paris, which was useful, for they came back another year for a longer stay, the general character of which in Pemberton's
 (35) memory today mixes pitifully and confusedly with that of the first. He sees Morgan's shabby knickerbockers—the everlasting pair that didn't match his blouse and that as he grew longer could only grow faded. He remembers
 (40) the particular holes in his three or four pairs of colored stockings.

Morgan was dear to his mother, but he never was better dressed than was absolutely necessary—partly, no doubt, by his own fault,
 (45) for he was as indifferent to his appearance as a German philosopher. "My dear fellow, so are you! I don't want to cast you in the shade." Pemberton could have no rejoinder for this—the assertion so closely represented
 (50) the fact. If however the deficiencies of his own wardrobe were a chapter by themselves he didn't like his little charge to look too

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 poor. Later he used to say “Well, if we’re poor, why, after all, shouldn’t we look it?” and he
 (55) consoled himself with thinking there was something rather elderly and gentlemanly in Morgan’s disrepair—it differed from the untidiness of the urchin who plays and spoils his things. He could trace perfectly the
 (60) degrees by which, in proportion as her little son confined himself to his tutor for society, Mrs. Moreen shrewdly forbore to renew his garments. She did nothing that didn’t show, neglected him because he escaped notice,
 (65) and then, as he illustrated this clever policy, discouraged at home his public appearances. Her position was logical enough—those members of her family who did show had to be showy.
 (70) During this period and several others Pemberton was quite aware of how he and his comrade might strike people; wandering languidly through the Jardin des Plantes³ as if they had nowhere to go, sitting on the
 (75) winter days in the galleries of the Louvre, so splendidly ironical to the homeless, as if for the advantage of the steam radiators. They joked about it sometimes: it was the sort of joke that was perfectly within the boy’s
 (80) compass. They figured themselves as part of the vast vague hand-to-mouth multitude of the enormous city and pretended they were proud of their position in it—it showed them “such a lot of life” and made them conscious
 (85) of a democratic brotherhood. If Pemberton couldn’t feel a sympathy in destitution with his small companion—for after all Morgan’s fond parents would never have let him really suffer—the boy would at least feel it with
 (90) him, so it came to the same thing. He used sometimes to wonder what people would think they were—to fancy they were looked askance at, as if it might be a suspected case of kidnapping. Morgan wouldn’t be taken

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 (95) for a young patrician with a tutor—he wasn’t smart enough—though he might pass for his companion’s sickly little brother.

¹Hall porter or custodian.

²Famous Paris monument; site of the tomb of Napoleon.

³Botanical garden.

- The primary purpose of the passage is to
 - denounce the ill treatment of an exceptional child.
 - describe a boy’s reactions to his irresponsible parents.
 - portray a selfish and unfeeling mother and son.
 - recount an outsider’s impressions of an odd family.
- It can most reasonably be inferred from the passage that the reason for the Moreens’ sudden departure from Nice had to do with
 - ill health.
 - shifts of mood.
 - educational opportunities.
 - financial problems.
- Which choice provides the best evidence for the answer to the previous question?
 - Lines 3–11 (“Pemberton . . . depression”)
 - Lines 11–18 (“They had . . . bags”)
 - Lines 18–26 (“The explanation . . . indigence”)
 - Lines 31–36 (“They learned . . . first”)

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4. It can be most reasonably inferred from the passage that the narrator is making these comments about Pemberton's travels with the Moreen family

- (A) on Pemberton's return with the Moreens to Nice.
- (B) in response to visiting Paris for the first time.
- (C) some time after Pemberton's wanderings with the Moreens.
- (D) in an effort to write down his memoirs.

5. Which choice provides the best evidence for the answer to the previous question?

- (A) Lines 31–36 (“They learned . . . the first”)
- (B) Lines 42–46 (“Morgan was dear . . . philosopher”)
- (C) Lines 59–63 (“He could trace . . . garments”)
- (D) Lines 77–85 (“They joked . . . brotherhood”)

6. The tone of Morgan's speech to his tutor (lines 46–49) can best be described as

- (A) apathetic.
- (B) bitter.
- (C) teasing.
- (D) self-righteous.

7. As described in lines 42–69, Mrs. Moreen's approach toward Morgan can best be described as

- (A) stern but nurturing.
- (B) fond but pragmatic.
- (C) cruel and unfeeling.
- (D) doting and overprotective.

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8. It can most reasonably be inferred from lines 63–69 that Mrs. Moreen most likely ceases to spend money on new clothing for Morgan because

- (A) she and her husband have grown increasingly miserly with the passage of time.
- (B) the child is so small for his age that he needs little in the way of clothing.
- (C) she is unwilling to offend Pemberton by dressing his pupil in finer clothes than Pemberton can afford.
- (D) she has only enough money to buy clothes for the family members who must appear in polite society.

9. As used in line 72, “strike” most nearly means

- (A) appear to.
- (B) run into.
- (C) achieve.
- (D) hit.

10. It can be inferred from the passage that Morgan and Pemberton regard the “hand-to-mouth multitude” of Paris (line 81) with a sense of

- (A) amusement.
- (B) condescension.
- (C) indifference.
- (D) identification.

11. As used in line 96, “smart” most nearly means

- (A) intelligent.
- (B) brisk.
- (C) fashionable.
- (D) impertinent.

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Questions 12–22 are based on the following passage.

In this excerpt from an essay on the symbolic language of dreams, the writer Erich Fromm explores the nature of symbols.

One of the current definitions of a symbol is that it is “something that stands for something else.” We can differentiate between three kinds of symbols: the
 (5) *conventional*, the *accidental*, and the *universal* symbol.

The *conventional* symbol is the best known of the three, since we employ it in everyday language. If we see the word
 (10) “table” or hear the sound “table,” the letters *t-a-b-l-e* stand for something else. They stand for the thing “table” that we see, touch, and use. What is the connection between the
 (15) word “table” and the *thing* “table”? Is there any inherent relationship between them? Obviously not. The *thing* table has nothing to do with the *sound* table, and the only
 (20) reason the word symbolizes the thing is the convention of calling this particular thing by a name. We learn this connection as children by the repeated experience of hearing the
 (25) word in reference to the thing until a lasting association is formed so that we don’t have to think to find the right word.

There are some words, however, in which the association is not only conventional. When we say “phooey,” for instance, we
 (30) make with our lips a movement of dispelling the air quickly. It is an expression of disgust in which our mouths participate. By this
 (35) quick expulsion of air we imitate and thus express our intention to expel something, to get it out of our system. In this case, as in some others, the symbol has an inherent
 (35) connection with the feeling it symbolizes.

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But even if we assume that originally many or even all words had their origins in some such inherent connection between symbol and the
 (40) symbolized, most words no longer have this meaning for us when we learn a language.

Words are not the only illustration for conventional symbols, although they are the most frequent and best known ones. Pictures
 (45) also can be conventional symbols. A flag, for instance, may stand for a specific country, and yet there is no intrinsic connection between the specific colors and the country for which they stand. They have been
 (50) accepted as denoting that particular country, and we translate the visual impression of the flag into the concept of that country, again on conventional grounds.

The opposite to the conventional symbol is the *accidental* symbol, although they have
 (55) one thing in common: there is no intrinsic relationship between the symbol and that which it symbolizes. Let us assume that someone has had a saddening experience in a certain city; when he hears the name of that
 (60) city, he will easily connect the name with a mood of sadness, just as he would connect it with a mood of joy had his experience been a happy one. Quite obviously, there is
 (65) nothing in the nature of the city that is either sad or joyful. It is the individual experience connected with the city that makes it a symbol of a mood.

The *universal* symbol is one in which there is an intrinsic relationship between
 (70) the symbol and that which it represents. Take, for instance, the symbol of fire. We are fascinated by certain qualities of fire in a fireplace. First of all, by its aliveness. It
 (75) changes continuously, it moves all the time, and yet there is constancy in it. It remains the same without being the same. It gives the impression of power, of energy, of grace

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- and lightness. It is as if it were dancing, and had an inexhaustible source of energy.
- (80) When we use fire as a symbol, we describe the *inner experience* characterized by the same elements which we notice in the sensory experience of fire—the mood of energy, lightness, movement, grace, gaiety,
- (85) sometimes one, sometimes another of these elements being predominant in the feeling.
- The universal symbol is the only one in which the relationship between the symbol and that which is symbolized is not
- (90) coincidental, but intrinsic. It is rooted in the experience of the affinity between an emotion or thought, on the one hand, and a sensory experience, on the other. It can be called universal because it is shared by all
- (95) men, in contrast not only to the accidental symbol, which is by its very nature entirely personal, but also to the conventional symbol, which is restricted to a group of people sharing the same convention. The
- (100) universal symbol is rooted in the properties of our body, our senses, and our mind, which are common to all men and, therefore, not restricted to individuals or to specific groups. Indeed, *the language of the universal symbol*
- (105) *is the one common tongue developed by the human race, a language which it forgot before it succeeded in developing a universal conventional language.*

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12. The primary purpose of the passage is to
- (A) refute an argument about the nature of symbolism.
 - (B) describe the process of verbalization.
 - (C) summarize the findings of a long-term research project.
 - (D) refine the definition of a technical term.
13. As used in lines 11–12, “stand for” most nearly means
- (A) tolerate.
 - (B) represent.
 - (C) support.
 - (D) rise.
14. According to lines 25–35, “table” and “phooey” differ in that
- (A) only one is a conventional symbol.
 - (B) “table” is a more commonly used symbol than “phooey.”
 - (C) “phooey” has an intrinsic natural link with its meaning.
 - (D) children learn “phooey” more readily than they learn “table.”
15. It can be inferred from the passage that another example of a word with both inherent and conventional associations to its meaning is
- (A) hiss.
 - (B) hike.
 - (C) hold.
 - (D) candle.

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16. Which of the following would the author be most likely to categorize as a conventional symbol?

- (A) a patchwork quilt
- (B) a bonfire
- (C) the city of London
- (D) the Statue of Liberty

17. Which choice provides the best evidence for the answer to the previous question?

- (A) Lines 20–24 (“We learn . . . word”)
- (B) Lines 33–35 (“In this case . . . symbolizes”)
- (C) Lines 36–40 (“But even . . . language”)
- (D) Lines 44–52 (“A flag . . . grounds”)

18. According to the author’s argument, a relationship between Disneyland and the mood of joy can best be described as

- (A) innate.
- (B) immutable.
- (C) elemental.
- (D) coincidental.

19. Which choice provides the best evidence for the answer to the previous question?

- (A) Lines 36–40 (“But even . . . language”)
- (B) Lines 44–48 (“A flag . . . stand”)
- (C) Lines 57–63 (“Let us . . . one”)
- (D) Lines 68–70 (“The *universal* . . . represents”)

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20. According to the passage, a major factor that distinguishes a universal symbol from conventional and accidental symbols is

- (A) its origins in sensory experience.
- (B) its dependence on a specific occasion.
- (C) the intensity of the mood experienced.
- (D) its appeal to the individual.

21. By saying “Take . . . the symbol of fire” (line 71), the author is asking the reader to

- (A) grasp it as an element.
- (B) consider it as an example.
- (C) accept it as a possibility.
- (D) assume it as a standard.

22. As used in line 100, “properties” most nearly means

- (A) possessions.
- (B) attributes.
- (C) premises.
- (D) assets.

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Questions 23–32 are based on the following passage.

The following passage is taken from a classic study of tarantulas published in *Scientific American* in 1952.

- A fertilized female tarantula lays from 200 to 400 eggs at a time; thus it is possible for a single tarantula to produce several thousand young. She takes no care of them beyond weaving a cocoon of silk to enclose the eggs. After they hatch, the young walk away, find convenient places in which to dig their burrows and spend the rest of their lives in solitude. Tarantulas feed mostly on insects and millipedes. Once their appetite is appeased, they digest the food for several days before eating again. Their sight is poor, being limited to sensing a change in the intensity of light and to the perception of moving objects. They apparently have little or no sense of hearing, for a hungry tarantula will pay no attention to a loudly chirping cricket placed in its cage unless the insect happens to touch one of its legs.
- But all spiders, and especially hairy ones, have an extremely delicate sense of touch. Laboratory experiments prove that tarantulas can distinguish three types of touch: pressure against the body wall, stroking of the body hair and riffling of certain very fine hairs on the legs called trichobothria. Pressure against the body, by a finger or the end of a pencil, causes the tarantula to move off slowly for a short distance. The touch excites no defensive response unless the approach is from above, where the spider can see the motion, in which case it rises on its hind legs, lifts its front legs, opens its fangs and holds this threatening posture as long as the object continues to move. When the motion stops,

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the spider drops back to the ground, remains quiet for a few seconds, and then moves slowly away.

- The entire body of a tarantula, especially its legs, is thickly clothed with hair. Some of it is short and woolly, some long and stiff. Touching this body hair produces one of two distinct reactions. When the spider is hungry, it responds with an immediate and swift attack. At the touch of a cricket's antennae the tarantula seizes the insect so swiftly that a motion picture taken at the rate of 64 frames per second shows only the result and not the process of capture. But when the spider is not hungry, the stimulation of its hairs merely causes it to shake the touched limb. An insect can walk under its hairy belly unharmed.

- The trichobothria, very fine hairs growing from disklike membranes on the legs, were once thought to be the spider's hearing organs, but we now know that they have nothing to do with sound. They are sensitive only to air movement. A light breeze makes them vibrate slowly without disturbing the common hair. When one blows gently on the trichobothria, the tarantula reacts with a quick jerk of its four front legs. If the front and hind legs are stimulated at the same time, the spider makes a sudden jump. This reaction is quite independent of the state of its appetite.

- These three tactile responses—to pressure on the body wall, to moving of the common hair, and to flexing of the trichobothria—are so different from one another that there is no possibility of confusing them. They serve the tarantula adequately for most of its needs and enable it to avoid most annoyances and dangers. But they fail the spider completely when it meets its deadly enemy, the digger wasp *Pepsis*.

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23. The primary purpose of the passage is to
- (A) report on controversial new discoveries about spider behavior.
 - (B) summarize what is known about the physical and social responses of tarantulas.
 - (C) challenge the findings of historic laboratory experiments involving tarantulas.
 - (D) discuss the physical adaptations that make tarantulas unique.
24. It can most reasonably be inferred from the opening paragraph that tarantulas
- (A) become apprehensive at sudden noises.
 - (B) depend on their mothers for nourishment after hatching.
 - (C) must consume insects or millipedes daily.
 - (D) are reclusive by nature.
25. Which choice provides the best evidence for the answer to the previous question?
- (A) Lines 1–6 (“A fertilized . . . eggs”)
 - (B) Lines 6–9 (“After . . . solitude”)
 - (C) Lines 9–12 (“Tarantulas . . . again”)
 - (D) Lines 12–15 (“Their sight . . . objects”)

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26. As used in line 29, “excites” most nearly means
- (A) enlivens.
 - (B) inflames.
 - (C) stimulates.
 - (D) awakens.
27. The author’s attitude toward tarantulas would best be described as one of
- (A) nervous fascination.
 - (B) reluctant curiosity.
 - (C) marked ambivalence.
 - (D) objective appreciation.
28. The description of what happens when one films a tarantula’s reaction to the touch of a cricket (lines 45–49) primarily is intended to convey a sense of the tarantula’s
- (A) omnivorous appetite.
 - (B) graceful movement.
 - (C) quickness in attacking.
 - (D) indifference to stimulation.
29. As used in line 65, “independent” most nearly means
- (A) self-sufficient.
 - (B) self-governing.
 - (C) impartial.
 - (D) regardless.

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30. In the passage, the author does all of the following EXCEPT
- (A) deny a possibility.
 - (B) define a term.
 - (C) correct a misapprehension.
 - (D) pose a question.
31. In the paragraphs immediately following this passage, the author most likely will
- (A) explain why scientists previously confused the tarantula's three tactile responses.
 - (B) point out the weaknesses of the digger wasp that enable the tarantula to subdue it.
 - (C) describe how the digger wasp goes about attacking tarantulas.
 - (D) demonstrate how the tarantula's three tactile responses enable it to meet its needs.
32. Which choice provides the best evidence for the answer to the previous question?
- (A) Lines 53–58 (“The trichobothria . . . movement”)
 - (B) Lines 64–66 (“This reaction . . . appetite”)
 - (C) Lines 67–71 (“These three . . . them”)
 - (D) Lines 74–76 (“But . . . Pepsis”)

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Questions 33–42 are based on the following passage.

This passage is adapted from John Locke, Second Treatise of Civil Government, originally published in 1689. Locke's Two Treatises of Civil Government had a profound effect on the framers of the US Declaration of Independence and Constitution.

[I]t will be said that, the people being ignorant and always discontented, to lay the foundation of government in the unsteady
Line opinion and uncertain humor of the people
(5) is to expose it to certain ruin; and no government will be able long to subsist if the people may set up a new legislative whenever they take offense at the old one. To this I answer: Quite the contrary. People are not so
(10) easily got out of their old forms as some are apt to suggest. They are hardly to be prevailed with to amend the acknowledged faults in the frame they have been accustomed to. And if there be any . . . defects, . . . it is not an
(15) easy thing to get them changed, even when all the world sees there is an opportunity for it. This slowness and aversion in the people to quit their old constitutions has, in the many revolutions which have been seen in this kingdom, in this and former ages still
(20) kept us to, or after some interval of fruitless attempts still brought us back again to, our old legislative of Kings, Lords, and Commons. And whatever provocations have made the
(25) crown be taken from some of our princes' heads, they never carried the people so far as to place it in another line.

But it will be said, this hypothesis lays a ferment for frequent rebellion. To which
(30) I answer: First, no more than any other hypothesis. For when the people are made miserable, and find themselves exposed to the ill-usage of arbitrary power . . . the same

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will happen. The people generally ill-treated,
 (35) and contrary to right, will be ready upon
 any occasion to ease themselves of a burden
 that sits heavy upon them. They will wish
 and seek for the opportunity, which in the
 change, weakness, and accidents of human
 (40) affairs seldom delays long to offer itself. He
 must have lived but a little while in the world
 who has not seen examples of this in his
 time, and he must have read very little who
 cannot produce examples of it in all sorts of
 (45) governments in the world.

Secondly, I answer, such revolutions
 happen not upon every little
 mismanagement in public affairs. Great
 mistakes in the ruling part, many wrong
 (50) and inconvenient laws, and all the slips of
 human frailty will be borne by the people
 without mutiny or murmur. But if a long
 train of abuses, prevarications and artifices,
 all tending the same way, make the design
 (55) visible to the people—and they cannot but
 feel what they lie under, and see whither
 they are going—it is not to be wondered
 that they should then rouse themselves and
 endeavor to put the rule into such hands
 (60) which may secure to them the ends for which
 government was at first erected. . . .

Thirdly, I answer that this power in the
 people of providing for their safety anew by
 a new legislative when their legislators have
 (65) acted contrary to their trust by invading their
 property, is the best fence against rebellion,
 and the probablest means to hinder it.
 For rebellion being an opposition, not to
 persons, but authority, which is founded
 (70) only in the constitutions and laws of the
 government, those whoever they be who
 by force break through, and by force justify
 their violation of them, are truly and properly
 rebels. For when men by entering into society

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(75) and civil government have excluded force,
 and introduced laws for the preservation
 of property, peace, and unity amongst
 themselves, those who set up force again
 in opposition to the laws . . . are properly
 (80) rebels; which they who are in power . . .
 being likeliest to do, the properest way to
 prevent the evil is to show them the danger
 and injustice of it who are under the greatest
 temptation to run into it.

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33. As used in line 4, "humor" most nearly means
- (A) wit.
 - (B) skepticism.
 - (C) amusement.
 - (D) temperament.
34. According to Locke, which of the following
 will NOT occur as a result of basing
 government on the will of the people?
- (A) Governments will be unstable because
 the people will rebel whenever they are
 dissatisfied.
 - (B) Governments will be stable because
 people are averse to change.
 - (C) The people will not rebel frequently.
 - (D) A government will be overturned when a
 long history of abuse cannot be tolerated
 by the people.

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35. Which choice best describes the structure of the first paragraph?
- (A) A principle is stated, an opposing principle is stated, and a synthesis is reached.
 - (B) A position is stated, an opposing position is stated, and examples supporting the latter position are given.
 - (C) A question is posed, a method of analysis is recommended, and the question is answered.
 - (D) A historical period is introduced, and events from the period are reviewed.
36. Locke's primary argument in the second paragraph is that
- (A) rebellion is inevitable, regardless of whether the power to govern is placed in the hands of the people.
 - (B) history is filled with examples of rulers using their power to halt rebellions.
 - (C) violent rebellion is a poor strategy for changing the government's treatment of the people.
 - (D) rebellions will increase if the power to govern is given to the people.
37. Which choice provides the best evidence for the answer to the previous question?
- (A) Lines 30–34 (“First, no more . . . will happen”)
 - (B) Lines 34–37 (“The people . . . upon them”)
 - (C) Lines 37–40 (“They will . . . offer itself”)
 - (D) Lines 40–45 (“He must . . . the world”)

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38. The author uses “abuses, prevarications and artifices, all tending the same way” (lines 53–54) as examples of
- (A) actions the people take when rebelling against the government.
 - (B) historical events.
 - (C) things that prevent the government from performing its proper functions.
 - (D) government behavior that justifies the people's rebellion.
39. As used in line 60, “ends” most nearly means
- (A) purposes.
 - (B) conclusions.
 - (C) extremities.
 - (D) segments.
40. Locke argues that the best check on rebellion is
- (A) providing the government with absolute authority.
 - (B) giving the people the power to replace an abusive government.
 - (C) a strong military.
 - (D) a divided government made up of Kings, Lords, and Commons.
41. Which choice provides the best evidence for the answer to the previous question?
- (A) Lines 17–23 (“This . . . Commons”)
 - (B) Lines 34–37 (“The people . . . upon them”)
 - (C) Lines 62–67 (“this power . . . hinder it”)
 - (D) Lines 71–74 (“those . . . properly rebels”)

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42. Based on the passage, what is Locke's argument for why the government, rather than the people, should at times be viewed as a rebel?
- (A) Government is founded on the will of the people; therefore, the people are always right.
 - (B) The people will never rise up to overthrow the government because they are afraid of change.
 - (C) Most governments do not protect the natural rights of the people.
 - (D) Rebellion is opposition to the authority of the law; therefore, the government is a rebel when it violates the legal limits of its power.

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Questions 43–52 are based on the following passages.

Largely unexplored, the canopy or treetop region of the tropical rainforest is one of the most diverse plant and animal communities on Earth. Passage 1 is an excerpt from a 1984 Scientific American article on the rain forest canopy; in it, the naturalist Donald R. Perry shares his research team's observations of epiphytes, unusual plants that flourish in this treetop environment. Passage 2, "Elucidating Epiphyte Diversity" by Andrew Sugden is taken from the 6 May 2011 issue of Science.

PASSAGE 1

The upper story of the rain forest, which we investigated, incorporates two-thirds of its volume. This region can be divided arbitrarily into a lower canopy, extending
 (5) from 10 to 25 meters above the ground, an upper canopy, reaching a height of 35 meters, and an emergent zone that encompasses the tops of the tallest trees, which commonly grow to heights of more
 (10) than 50 meters. The canopy is well lighted, in contrast to the forest understory, which because of thick vegetation above receives only about 1 percent of the sunlight that falls on the treetops. In the canopy all but
 (15) the smallest of the rain forest trees put forth their leaves, flowers and fruit. It also contains many plants that exist entirely within its compass, forming vegetative communities that in number of species and complexity of
 (20) interactions surpass any others on the earth.

Among the most conspicuous features of vegetation in the canopy of the tropical rain forest are epiphytes. About 28,000 species in 65 families are known worldwide, 15,500
 (25) of them in Central and South America; they

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Layering of environments in the rain forest fosters species diversity. In the understory, or basement, light is dim, humidity rarely drops below 95 percent, and temperature varies little. In the canopy, sunlight is abundant and humidity and temperatures fluctuate. Each level of the forest has its own array of plants and animals, including pollinating insects.

include species of orchids, bromeliads, and arboreal cacti as well as lower plants such as lichens, mosses, and ferns. Thousands more epiphyte varieties remain unidentified.

- (30) The Greek meaning of the word epiphyte is "plant that grows on a plant," and they carpet tree trunks and branches. Epiphytes sprout from seeds borne by the wind or deposited by animals, their roots holding tight to the interstices of the bark. Yet they are nonparasitic; their hosts provide them with nothing more than a favorable position in the brightly lighted canopy. For nourishment epiphytes depend on soil particles and dissolved minerals carried in rainwater, and on aerial deposits of humus. The deposits are the product of organic debris, such as dead leaves from epiphytes and other plants, that lodges among epiphyte roots.
- (40) Water is directly available to epiphytes only when it rains; other plants have continuous access to moisture trapped in the soil. As a result many epiphytes have

- developed features that collect and retain (50) rainwater. Some, including orchids and arboreal cacti, have succulent stems and leaves, with spongy tissues that store water, as well as waxy leaf coatings that reduce the loss of moisture through transpiration.¹
- (55) Many orchids have bulbous stem bases; other families of epiphytes impound water in tanks formed by tight rosettes of leaves or in cups shaped by the junctions of broadened petioles² and stems. Some species possess
- (60) absorbent, spongelike root masses that soak up and hold water. Bromeliads, a Central and South American family, can hold reserves of several gallons within their cisternlike bases, forming "arboreal swamps" that attract
- (65) insects of many species, earthworms, spiders, sow bugs, scorpions, tree frogs, and insect-eating birds.

¹Passage of water through a plant to the atmosphere.
²Slender stalks that attach a leaf to the stem.

GO ON TO THE NEXT PAGE

MODEL TEST 4

1

PASSAGE 2

In tropical forests, an important fraction of the total plant species diversity is composed (70) of epiphytes: plants that are rooted for part or all their life on the trunks and branches of trees and lianas. The patterns of epiphyte diversity are still poorly understood relative to those of trees, however, because of (75) logistical challenges, such as tree height. Benavides et al. performed a comparative analysis of the epiphyte communities in lowland forest in Colombian Amazonia, aiming to understand how landscape unit (80) (swamp forest, floodplain forest, and well-drained upland) and host tree species influenced the composition of their epiphyte communities, using a combination of collecting by tree climbing and binocular (85) observations. They recorded 154 epiphyte species on 411 tree species. There were clear associations between tree/liana species assemblages and epiphyte species assemblages, but there were few significant (90) associations between individual host species and epiphyte species. The high diversity of both groups of plants in the sampled plots made testing for individual host preferences difficult, suggesting the need for further (95) studies.

1

43. The author of Passage 1 characterizes the floor or understory of the rain forest as relatively
- (A) insignificant.
 - (B) voluminous.
 - (C) illuminated.
 - (D) obscure.
44. Which choice provides the best evidence for the answer to the previous question?
- (A) Lines 1–3 (“The upper . . . volume”)
 - (B) Lines 10–14 (“The canopy . . . treetops”)
 - (C) Lines 16–20 (“It also . . . earth”)
 - (D) Lines 21–29 (“Among . . . unidentified”)
45. As used in line 18, “compass” most nearly means
- (A) a curved arc.
 - (B) directions.
 - (C) parameters.
 - (D) enclosing limits.
46. It can most reasonably be inferred from Passage 1 that which of the following is true of epiphytes?
- (A) They lack an adequate root system.
 - (B) They cannot draw moisture from tree trunks.
 - (C) They are incapable of transpiration.
 - (D) They are hard to perceive in the dense rain forest canopy.
47. As used in line 27, “lower” most nearly means
- (A) below average.
 - (B) relatively primitive.
 - (C) less tall.
 - (D) more sparse.

1

GO ON TO THE NEXT PAGE

1

48. Epiphytes have direct access to water only when it rains because
- (A) they lack the ability to collect moisture.
 - (B) dead leaves and other organic debris cover their roots.
 - (C) the thick canopy protects them from rainstorms.
 - (D) they lack connections to water in the ground.

49. In line 64, the quotes around the phrase “arboreal swamps” indicate that
- (A) the author is quoting a standard technical term.
 - (B) the term is intended to have a humorous effect.
 - (C) the term is being used in a special sense.
 - (D) the author means the term literally.

50. What information discussed in Passage 2 is clarified by referring to the infographic accompanying Passage 1?
- (A) The information in lines 68–72 (“In tropical . . . lianas”)
 - (B) The information in lines 72–75 (“The patterns . . . height”)
 - (C) The information in lines 85–86 (“They recorded . . . species”)
 - (D) The information in lines 91–95 (“The high . . . studies”)

1

51. Which choice best states the relationship between the two passages?
- (A) Passage 2 draws alternative conclusions from the observations shared in Passage 1.
 - (B) Passage 1 proposes a hypothesis that is confirmed in Passage 2.
 - (C) Passage 1 introduces a concept that is elaborated on in Passage 2.
 - (D) Passage 2 restates in less vivid terms the information presented in Passage 1.
52. The authors of both passages would most likely agree with which of the following statements about epiphyte studies?
- (A) They are most efficiently conducted by means of binocular observation.
 - (B) They need to focus on observations of epiphytes in the understory.
 - (C) They necessarily entail certain challenges for researchers.
 - (D) They should primarily be considered an untapped resource.

1



If there is still time remaining, you may review your answers.

2

2

2

WRITING AND LANGUAGE TEST

35 MINUTES, 44 QUESTIONS

Turn to Section 2 of your answer sheet to answer the questions in this section.

Directions: Questions follow each of the passages below. Some questions ask you how the passage might be changed to improve the expression of ideas. Other questions ask you how the passage might be altered to correct errors in grammar, usage, and punctuation. One or more graphics accompany some passages. You will be required to consider these graphics as you answer questions about editing the passage.

There are three types of questions. In the first type, a part of the passage is underlined. The second type is based on a certain part of the passage. The third type is based on the entire passage.

Read each passage. Then, choose the answer to each question that changes the passage so that it is consistent with the conventions of standard written English. One of the answer choices for many questions is "NO CHANGE." Choosing this answer means that you believe the best answer is to make no change in the passage.

Questions 1–11 are based on the following passage and supplementary material.

The Online Job Hunt

More and more, technology is changing the ways people find jobs and employers select candidates. Think back to the days when the job hunter ❶ chose his or her most precious qualities, wrote them out on one sheet of paper, and sold the best version of ❷ themselves to a prospective employer. No longer is it that simple. Google and various social media sites like Facebook and Twitter mean that your control over exactly how you come across to an employer is very different from the traditional resume model. In fact, research shows that approximately ❸ one-half of all employers are taking to online searches in the hiring process. What does Google say about you?

1. (A) NO CHANGE
(B) choose
(C) has chose
(D) had choose
2. (A) NO CHANGE
(B) yourself
(C) himself or herself
(D) oneself
3. Which choice offers the most accurate interpretation of the data in the chart?
(A) NO CHANGE
(B) one-fourth
(C) two-thirds
(D) four-fifths

MODEL TEST 4

GO ON TO THE NEXT PAGE

2

The good news is technology can work in your favor **4** if you recognize the challenges of using technology properly. If you approach the World Wide Web as a tool, it can be **5** valuable in a way not witnessed heretofore. Indeed, there are more ways than ever to market yourself and your skills, and to network with other professionals in your field. First, you will want to make sure you are competing in the online job hunt. Career websites like LinkedIn, Dice, and Monster make it simple to get started. **6** Within your online profiles it is critical that you include information, about your educational background, previous work experience, intern or research positions, and volunteer efforts. **7** Now is not the time to be modest.

What's more—you don't have to stop there. **8** Whereas the old resume needed to be concise and fit in the scopes of one or two pages,

2

4. Which choice provides the most logical and relevant conclusion to the sentence?

- (A) NO CHANGE
- (B) since technology has made unbelievable strides.
- (C) despite the dangers of downloading computer viruses.
- (D) just as methodically as it can work against you.

5. (A) NO CHANGE
(B) unprecedentedly valuable.
(C) precious beyond your wildest dreams.
(D) helpful.

6. (A) NO CHANGE
(B) Within your online profiles it is critical that you include information about your educational background, previous
(C) Within your online profiles, it is critical that you include information about your educational background, previous
(D) Within your online profiles, it is critical that you include information about: your educational background, previous

7. Which choice most logically reinforces the statement in the previous sentence?

- (A) NO CHANGE
- (B) Be careful to keep it short and sweet.
- (C) Remember—your application gets accepted, not your personality.
- (D) Good things happen to those who wait.

8. (A) NO CHANGE
(B) Since
(C) Because
(D) Moreover

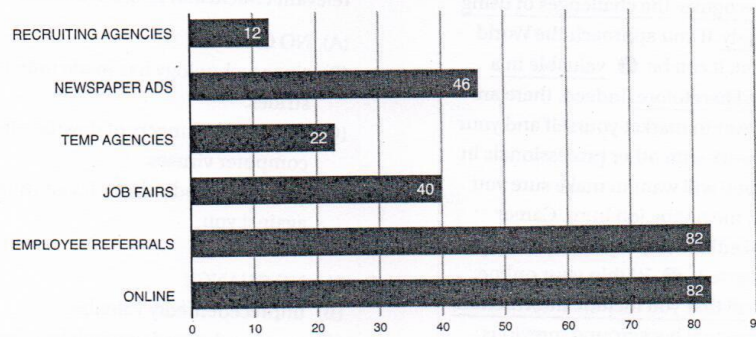
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2

2

2

Percent Using Recruiting Methods to Fill Jobs



■ Percent Using Recruiting Methods to Fill Jobs*

*100 Human Resource Departments were randomly selected and asked which recruiting methods they currently use to fill their job openings.

your online profile can be much more thorough. Make sure to post a 9 professional picture, this allows the employer to see that you are a real person with real skills and makes you more likely to be interviewed. Include any awards or achievements that can relate to the job position and depict your broader talents. Don't forget to mention any particular leadership responsibilities you've been granted in previous experience. Have you taken the initiative to attend conferences or events? Do tell. 10 Be sure to supplement your job search with the tried-and-true methods of newspaper ads and recruiting agencies.

9. (A) NO CHANGE
 (B) professional picture: this
 (C) professional; picture this
 (D) professional picture this
10. Which choice offers an accurate interpretation of the data in the chart by emphasizing one of the most popular recruiting methods?
- (A) NO CHANGE
 (B) Additionally, polish your interpersonal networking skills before you head to a job fair to "wow" potential employers.
 (C) There is even room in most online career profiles for positive feedback from colleagues, supervisors, or mentors.
 (D) And while it may not be ideal, working temporarily at a job in a part-time capacity can be a great way to get your foot in the door.

GO ON TO THE NEXT PAGE

2

While many argue that job hunting has changed for the worse, it doesn't have to be that way. Never before have recent graduates, career changers, and the unemployed ever had such a plethora of resources at their disposal. ❶ Employers are able to find prospective candidates at the click of a button, while job hunters can meet and connect with career professionals that were previously unreachable. Don't let Google—in all its magnitude—be your disadvantage.

2

11. Should the underlined sentence be kept or deleted?
- (A) Kept. It provides specific details in support of the paragraph's argument.
 - (B) Kept. It gives the essay's first statement about the importance of online job hunting.
 - (C) Deleted. It contradicts information elsewhere in the passage.
 - (D) Deleted. It distracts from the primary argument of the paragraph.

2

2

Questions 12–22 are based on the following passage.

The Glass Menagerie

Among artists living and influential, few rival the famous American classical composer Phillip Glass. He is celebrated for his wide-ranging collaborations with literary figures such as Allen Ginsberg, film directors such as Woody Allen, and 12 David Bowie whom is a producer of records. His broad range in operas, symphonies, and compositions has contributed to his 13 unparalleled popularity within multigenerational audiences. Perhaps no other composer has appealed to such an expansive fan base, allowing Glass's influence in opera houses, dance halls, and popular culture to go uncontested. His operas continue to play internationally and rarely leave an open seat.

With music that is highly repetitive, Glass has been 14 referred to as a minimalist and aligned with the work of other composers like La Monte Young, Terry Riley, and Steve Reich. 15 Minimalism a term that Glass has taken strides to distance himself from, is marked by a nonnarrative and nonrepresentational conception of a work in progress, and represents a new approach to the activity of listening to music by focusing on the internal processes of the music. Tom Johnson 16, a self-identifying minimalist, defines it this way: "It [minimalism] includes, by definition, any music that works with limited or minimal materials: pieces that use only a few notes, pieces that use only a few words of text, or pieces written for very limited instruments, such as antique cymbals, bicycle wheels, or whiskey glasses." Glass prefers, instead, to refer to himself as a classicist with repetitive structures.

2

12. (A) NO CHANGE
(B) David Bowie who is best known as a record producer.
(C) a person who has the career of being a record producer, like David Bowie.
(D) record producers such as David Bowie.
13. The author wants to show that Bowie has great popularity. Which word best expresses this notion?
(A) NO CHANGE
(B) solid
(C) decent
(D) voracious
14. Which word, if inserted at this point, would best express that Glass's music is not universally admired?
(A) understandably
(B) logically
(C) controversially
(D) repeatedly
15. (A) NO CHANGE
(B) Minimalism: a term that Glass has taken strides to distance himself from is
(C) Minimalism—a term from which Glass has taken strides to distance himself—is
(D) Minimalism, a term from which Glass has taken strides to distance himself—is
16. The writer would like to express that Tom Johnson is a relevant person to provide commentary on this topic. Which choice best accomplishes this?
(A) NO CHANGE
(B) , an admirer of all things Phillip Glass,
(C) , an American historian of the eighteenth and nineteenth centuries,
(D) , an expert in operatic costume design,

2

GO ON TO THE NEXT PAGE

2

17 To his highest achievements, Glass has been nominated for several Academy Awards and won a Golden Globe award in 1999 for his score in *The Truman Show*. He has been the topic of a series of documentaries and has 18 writing more than one autobiography. In his most recent, *Words Without Music*, Glass discusses his influences, beginning with his Jewish father who ran a record shop in Baltimore. His father's love for Schubert, Shostakovich, and Bartok 19 took in Glass a love for music; by the time he was fifteen years old, he had become the classical-music buyer for the record shop. He studied at the University of Chicago and the Julliard School, before moving to Paris to study technique under the infamous Nadia Boulanger. It was only with the success of his opera "Einstein on the Beach" in 1976 that Glass made a prominent name 20 for himself.

Coinciding with his return to New York, Glass formed the Phillip Glass Ensemble, seven musicians whose music is amplified and fed through a mixer. The rest is history. In the last two decades, Glass 21 had composed numerous operas, symphonies, concertos, and soundtracks; his prolific works are so common that 22 they are occasionally encountered by the populace.

2

17. (A) NO CHANGE
(B) On
(C) Between
(D) Among

18. (A) NO CHANGE
(B) writing more than
(C) written more than
(D) written more than

19. (A) NO CHANGE
(B) spurred
(C) used
(D) inspire

20. (A) NO CHANGE
(B) through oneself.
(C) by yourself.
(D) in oneself.

21. (A) NO CHANGE
(B) had been composing
(C) has composed
(D) have composed

22. Which choice would most clearly and specifically support the statement immediately beforehand in the sentence?
- (A) NO CHANGE
(B) even a layperson would recognize his tunes.
(C) one can even find them performed in the elite symphonic halls of high society.
(D) it is relatively effortless for a nonexpert to recognize their quality.

2

GO ON TO THE NEXT PAGE

2

Questions 23–33 are based on the following passage and supplementary material.

For Richer or For Poorer

Everyone is familiar with Robin Hood's plight to take from the rich and give to the poor. However, the debate of economic redistribution is far from archaic and rarely confined to folklore, especially given that between 1980 and 2010, incomes for the **23** top 20 percent nearly doubled while incomes in the bottom 10 percent measurably increased. One of the latest arguments for redistribution comes from French economist

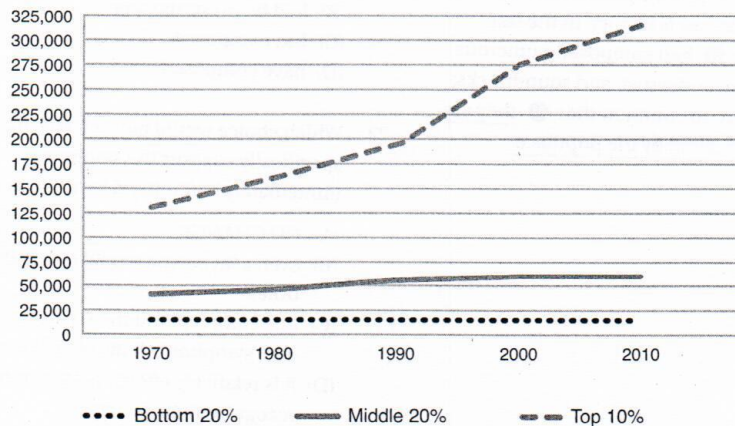
2

23. Which choice gives the most accurate interpretation of the data in the graph?

- (A) NO CHANGE
- (B) top 10 percent nearly doubled while incomes in the bottom 20% barely changed.
- (C) top 10 percent nearly tripled while incomes in the middle 10% barely changed.
- (D) top 10 percent nearly quadrupled while incomes in the bottom 20% decreased.

2

U.S. Median Annual Income



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2

Thomas Piketty, who has gathered and studied tax records over a 200-year span. ²⁴ Piketty argues that inequality is an inherent feature of capitalism that threatens democracy.

In his recent best seller, *Capital in the Twenty-First Century*, Piketty uses data gathered from 20 countries to posit that the rate of return in developed countries is ²⁵ persistently greater than economic growth—this lasting trend is the main driver of inequality and will only widen the gap further in the future. His work shows that return has been steady even during years of recession when growth has plummeted. While many consider his book esoteric— ²⁶ especially given its old age and questionable modern-day applicability—it is indisputably attracting wide attention. Piketty’s data on the wealthy elite makes it somewhat pioneering despite its foundations in age-old economics. ²⁷ Piketty even offers a solution; economic redistribution through a progressive global tax on wealth.

2

24. The writer is considering inserting this sentence at this point in the passage:

“His research considers the questions of long-term inequality, concentration of wealth, and potential economic growth, and ultimately concludes that the ever-rising concentration of wealth is not self-correcting.”

Should she make this insertion?

- (A) Yes. It elaborates on Piketty’s background and connects to the next sentence.
(B) Yes. It provides helpful details about Piketty’s research methodology.
(C) No. It gives irrelevant information to the paragraph’s argument.
(D) No. It repeats the general idea from the previous sentence.
25. (A) NO CHANGE
(B) chronically more massive
(C) consistently more expensive
(D) often large
26. Which choice best elaborates on the first part of this sentence?
- (A) NO CHANGE
(B) since beautiful illustrations are just as helpful to my understanding as is polished prose
(C) given the often controversial ideas presented in this work
(D) a trait that may explain why the 600+ page tome sits unread on library bookshelves
27. (A) NO CHANGE
(B) Piketty, even offers a solution, economic
(C) Piketty even offers a solution: economic
(D) Piketty even offers, a solution economic

2

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2

Piketty faces many ²⁸ observers. Matthew Rognlie, a graduate student at MIT, has become a media sensation with his paper that points out what he sees as several flaws in Piketty's argument. Rognlie argues that, according to the law of diminishing returns, the rate of return will eventually ²⁹ decrease; goes on to say that Piketty has an inflated idea of current return and doesn't consider depreciation. Rognlie ³⁰ points at housing wealth as the cause of worsening inequality and shows that Piketty's conclusions are based on the assumption that capital can be substituted for the working class, which is untrue in the housing market. According to Rognlie, the solution put forth in *Capital in the Twenty-First Century*, since it will do little to limit ³¹ homeowners' returns on assets, is no solution at all.

But, if Rognlie's argument holds, do all homeowners benefit? Surely not. Working-class families will continue to buy only in neighborhoods where they can afford homes and where home values are unpredictable. ³² Unexpectedly, they will face further financial instability; meanwhile, the privileged few who can afford to purchase real estate in New York, Chicago, London, and so on will see their returns peak. ³³ Whether or not you agree or disagree with Piketty is not as important as whether you recognize the severity and possible implications of his argument.

2

28. Which word choice is most logically supported by the information in the sentence that follows?
- (A) NO CHANGE
(B) scholars.
(C) enemies.
(D) critics.
29. (A) NO CHANGE
(B) decrease, goes
(C) decrease; he goes
(D) decrease, he goes
30. (A) NO CHANGE
(B) points to
(C) points on
(D) point through
31. (A) NO CHANGE
(B) homeowner's
(C) the home owner's
(D) homeowners
32. (A) NO CHANGE
(B) Paradoxically,
(C) Typically,
(D) Hence,
33. (A) NO CHANGE
(B) Whether you agree or disagree with
(C) Whether you are agreeing
(D) OMIT the underlined portion.

2

GO ON TO THE NEXT PAGE

2

Questions 34–44 are based on the following passage.

Hypocrisy of Hippocratic Humorism

Sometimes, scientific paradigm shifts in the name of innovation are anything but innovative. The revolutionary theory of the four bodily humors (i.e., the idea that disease results from a physical imbalance in the bodily “humors”) ³⁴ had popularized in 400 B.C.E. in ancient Greece and has been a major obstacle to scientific advancement ever since.

The theory of the humors cannot even be described as a paradigm shift (and certainly not one contributing to medical science) for ³⁵ it revolutionized the way that medical practitioners approached their craft. The couching of the humors in the physical world as opposed to the spiritual world did not make it any less mystical but made it more ³⁶ intellectualized entrenched. We of course know today that humorism is abjectly bunk; one of the four humors—specifically black bile—does not exist in nature but was added to tidily complement classical theories of the four natural elements. From a scientific perspective, black bile has every bit as much to do with cancer as ³⁷ demons do with epilepsy.

Even a cursory ³⁸ analysis of Western medicine’s history will reveal that the single greatest obstacle to the advent of evidence-based

2

34. (A) NO CHANGE
(B) have
(C) was
(D) were
35. Which choice would most logically and relevantly justify the statement made in the first part of the sentence?
(A) NO CHANGE
(B) it merely trades one baseless system of mystical superstition for another.
(C) it does not attempt to provide a theoretical understanding of bodily functions.
(D) while it was influential in ancient Greece, it did not have influence beyond this limited geographic area.
36. (A) NO CHANGE
(B) intellectually
(C) intelligent
(D) intellectual
37. The writer wants to use an applicable analogy to establish the absurdity of using black bile to justify cancer. Which choice best accomplishes this goal?
(A) NO CHANGE
(B) ice does with water.
(C) cartoons do with teenage violence.
(D) drugs do with addiction.
38. (A) NO CHANGE
(B) analyses of Western medicines’ history
(C) analysis of the history of the medicine of the West
(D) analyzing of the history of medical science in Western society

2

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2

medical science was not—as has often been posited—religion but Hippocratic humorism itself. 39. One's tendency to linearize progress retrospectively—particularly in the sciences— has contributed to the fallacious belief that the discovery that lightning results not from the fury of an angry God 40. and from an atmospheric electrical discharge, and the transition of the accepted source of epilepsy from mischievous Roman deities to an imaginary bodily fluid are in some way equivalently significant to the development of modern science.

Humorism held medical discovery back for centuries at a time when the pure sciences 41. were conducting medical research; it established a systemic insularity in the field that cut medicine off from discoveries in biology, chemistry, and physics, and generated a remarkably long-lived illusion of comprehensiveness that categorically rejected revision and innovation. 42. Somewhat, humorism was a far more persistent enemy of medical science than was superstition because it wore the guise of

2

39. (A) NO CHANGE
(B) Ones
(C) The
(D) They're

40. (A) NO CHANGE
(B) but from
(C) because of
(D) with

41. The writer would like to emphasize how humorism prevented medical discovery from advancing. Which choice best accomplishes this goal?
- (A) NO CHANGE
(B) were shifting from the foreground to the background;
(C) were about to develop further scientifically;
(D) were preparing for a renaissance;

42. (A) NO CHANGE
(B) In contrast,
(C) Further,
(D) Because of this,

2

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2

naturalism. By pretending to possess a physical basis for its tenets, humorism **43** contributed to a deep-seeded belief, among physicians well, into the nineteenth century that pathology was not only independent of supernatural influences but of essentially all external influences. This notion of corporeal isolation—established by the theory of humoral imbalances—laid the foundation for the staunch medical opposition encountered by advocates of the germ theory of disease, and **44** conducted a paucity of help to the geometric growth of the sciences.

2

43. (A) NO CHANGE
(B) contributed to a deep-seeded belief among physicians, well into the nineteenth century, that pathology was not, only independent
(C) contributed to a deep-seeded belief among physicians well into the nineteenth century that pathology, was not only independent
(D) contributed to a deep-seeded belief among physicians well into the nineteenth century that pathology was not only independent
44. Which choice most specifically elaborates on the long-term negative impact that the belief in corporeal isolation had on medical science?
(A) NO CHANGE
(B) delayed understanding of microbial pathogens for at least three centuries.
(C) viral pathogens cannot be treated by antibiotics but must run their natural course.
(D) germs continue to plague patients and medical practitioners up to the present day.

2

STOP

If there is still time remaining, you may review your answers.

MODEL TEST 4

3



3

MATH TEST (NO CALCULATOR)

25 MINUTES, 20 QUESTIONS

Turn to Section 3 of your answer sheet to answer the questions in this section.

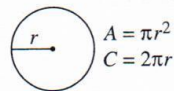
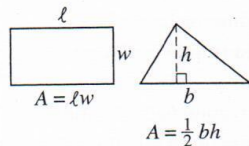
Directions: For questions 1-15, solve each problem and choose the best answer from the given options. Fill in the corresponding circle on your answer document. For questions 16-20, solve the problem and fill in the answer on the answer sheet grid.

Notes:

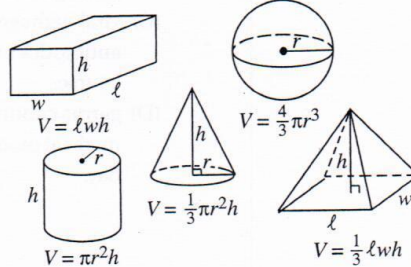
- Calculators are **NOT PERMITTED** in this section.
- All variables and expressions represent real numbers unless indicated otherwise.
- All figures are drawn to scale unless indicated otherwise.
- All figures are in a plane unless indicated otherwise.
- Unless indicated otherwise, the domain of a given function is the set of all real numbers x for which the function has real values.

REFERENCE INFORMATION

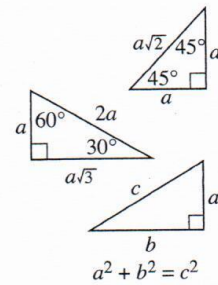
Area Facts



Volume Facts



Triangle Facts



The arc of a circle contains 360° .
 The arc of a circle contains 2π radians.
 The sum of the measures of the angles in a triangle is 180° .

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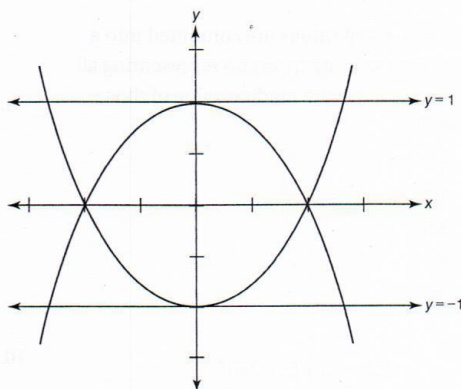
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- Max purchased some shares of stock at \$10 per share. Six months later the stock was worth \$20 per share. What was the percent increase in the value of Max's investment?
 - 20%
 - 50%
 - 100%
 - 200%
- The median annual salary of all the employees at Hartley's Home Supplies is \$45,000, whereas the range of their salaries is \$145,000. Which of the following is the most logical explanation for the large difference between the median and the range?
 - Half of the employees earn less than \$45,000.
 - There is at least one employee who earns more than \$150,000.
 - The average salary of the employees is between \$45,000 and \$145,000.
 - More employees earn over \$100,000 than earn less than \$25,000.
- Which of the following expressions is equivalent to $\frac{a+b}{3+4}$?
 - $\frac{a}{3} + \frac{b}{4}$
 - $\frac{a}{7} + \frac{b}{7}$
 - $\frac{a+b}{3} + \frac{a+b}{4}$
 - $\frac{a+b}{7} + \frac{a+b}{7}$



3

- Two cylindrical tanks have the same height, but the radius of the larger tank equals the diameter of the smaller tank. If the volume of the larger tank is $k\%$ more than the volume of the smaller tank $k =$
 - 100
 - 200
 - 300
 - 400



$$y = x^2 - 1$$

$$y = -x^2 + 1$$

$$y = 1$$

$$y = -1$$

- A system of four equations and their graphs are shown above. How many solutions does this system of equations have?
 - 0
 - 2
 - 4
 - 8

GO ON TO THE NEXT PAGE

3

6. Barbara and Marc each rolled a single die 50 times. The frequency distributions for each of them are given below.

Distribution of Barbara's 50 Rolls

Number	1	2	3	4	5	6
Frequency	4	10	8	8	8	12

Distribution of Marc's 50 Rolls

Number	1	2	3	4	5	6
Frequency	7	11	13	3	8	8

If the two distributions are combined into a single frequency distribution representing all 100 rolls, what is the median value of those 100 rolls?

- (A) 3
(B) 3.25
(C) 3.5
(D) 4

$$[(2x + y) + (x + 2y)]^2$$

7. Which of the following expressions is equivalent to the expression above?

- (A) $3(x^2 + y^2)$
(B) $9(x^2 + y^2)$
(C) $3(x + y)^2$
(D) $9(x + y)^2$



3

8. To get to a business meeting, Joanna drove m miles in h hours, and arrived $\frac{1}{2}$ hour early. At what rate should she have driven to arrive exactly on time?

- (A) $\frac{2m+h}{2h}$
(B) $\frac{2m-h}{2h}$
(C) $\frac{2m}{2h-1}$
(D) $\frac{2m}{2h+1}$

9. How many points of intersection are there of the graphs whose equations are $y = -(x-3)^2 + 3$ and $y = (x+3)^2 - 3$?

- (A) 0
(B) 1
(C) 2
(D) More than 2

10. If f and g are functions such that $f(x) = (2x + 3)g(x)$, which of the following statements must be true?

- (A) The graph of $f(x)$ crosses the x -axis at $-\frac{2}{3}$.
(B) The graph of $f(x)$ crosses the x -axis at $-\frac{3}{2}$.
(C) The graph of $f(x)$ crosses the x -axis at $\frac{2}{3}$.
(D) The graph of $f(x)$ crosses the x -axis at $\frac{3}{2}$.

GO ON TO THE NEXT PAGE

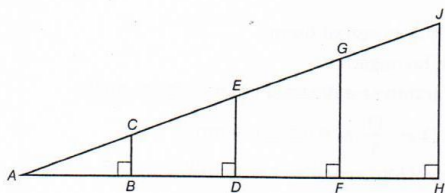
3

11. Lee purchased a 7-year \$1,000 certificate of deposit (CD) at his local savings bank. As a special incentive, the bank offered an introductory interest rate of 5% for the first year and then paid its regular 3% interest per year for the next 6 years. Which of the following gives the value V , in dollars, of the CD n years after Lee purchased it, where $1 < n \leq 7$?

- (A) $V(n) = 1,050(0.97)^{n-1}$
 (B) $V(n) = 1,050(1.03)^{n-1}$
 (C) $V(n) = 1,050(0.97)^n$
 (D) $V(n) = 1,050(1.03)^n$

12. If $i = \sqrt{-1}$ and $(1 + i) + (1 - i) = (a + bi)$, where a and b are real numbers, what are the values of a and b ?

- (A) $a = 0$ and $b = 1$
 (B) $a = 0$ and $b = -1$
 (C) $a = 1$ and $b = 0$
 (D) $a = 2$ and $b = -2$



13. In the figure above, what is the ratio of the area of trapezoid $FHJG$ to the area of trapezoid $BCED$?

- (A) 2:1
 (B) 3:1
 (C) 4:1
 (D) 7:3



3

14. If the amount, a , in Alan's retirement account is $\frac{1}{10}$ percent of b , the amount in his boss's retirement account, then b is what percent of a ?

- (A) 100%
 (B) 1,000%
 (C) 10,000%
 (D) 100,000%

15. If a is a constant, for what values of a does the line whose equation is $x + y = a(x - y)$ have a positive slope?

- (A) $a = 1$
 (B) $a \neq -1$
 (C) $-1 < a < 1$
 (D) $a < -1$ or $a > 1$

GO ON TO THE NEXT PAGE



Grid-in Response Directions

In questions 16–20, first solve the problem, and then enter your answer on the grid provided on the answer sheet. The instructions for entering your answers follow.

- First, write your answer in the boxes at the top of the grid.
- Second, grid your answer in the columns below the boxes.
- Use the fraction bar in the first row or the decimal point in the second row to enter fractions and decimals.

Write your answer in the boxes

Grid in your answer

Answer: $\frac{8}{15}$

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

Answer: 1.75

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

Answer: 100

1	0	0
.	.	.
0	0	0
1	1	1
2	2	2
3	3	3

1	0	0
.	.	.
0	0	0
1	1	1
2	2	2
3	3	3

Either position is acceptable

- Grid only one space in each column.
- Entering the answer in the boxes is recommended as an aid in gridding but is not required.
- The machine scoring your exam can read only what you grid, so you **must grid-in your answers correctly to get credit**.
- If a question has more than one correct answer, grid-in only one of them.
- The grid does not have a minus sign; so no answer can be negative.
- A mixed number *must* be converted to an improper fraction or a decimal before it is gridded.
- Enter $1\frac{1}{4}$ as 5/4 or 1.25; the machine will interpret 11/4 as $\frac{11}{4}$ and mark it wrong.
- All decimals must be entered as accurately as possible.** Here are three acceptable ways of gridding

$$\frac{3}{11} = 0.272727 \dots$$

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

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

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

- Note that rounding to .273 is acceptable because you are using the full grid, but you would receive **no credit** for .3 or .27, because they are less accurate.

3



3

16. What is the value of $4^{\frac{1}{2}} \times 8^{\frac{1}{3}} \times 16^{\frac{1}{4}}$?

19. What is the sum of the x -coordinate and y -coordinate of the point where the lines $y = 3x + 2$ and $y = 2x + 3$ intersect?

17. If $f(x) = 3 + \frac{5}{x}$, what number CANNOT be a value of $f(x)$?

20. The graph whose equation is

$$(x-4)^2 + (y-2)^2 = 4$$

is a circle. If m represents the number of times the circle intersects the y -axis and if n represents the number of times the circle intersects the x -axis, what is the value of $m + n$?

18. For what value of n will the equation $3(x+2) + 5(x+3) = 2(x+5) + n(x+3) - 7$ have infinitely many solutions?



If there is still time remaining, you may review your answers.



MATH TEST (CALCULATOR)

55 MINUTES, 38 QUESTIONS

Turn to Section 4 of your answer sheet to answer the questions in this section.

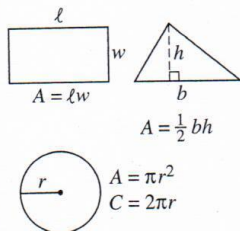
Directions: For questions 1-30, solve each problem and choose the best answer from the given options. Fill in the corresponding circle on your answer document. For questions 31-38, solve the problem and fill in the answer on the answer sheet grid.

Notes:

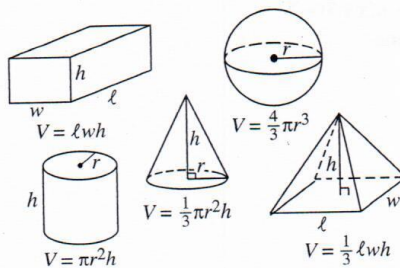
- Calculators **ARE PERMITTED** in this section.
- All variables and expressions represent real numbers unless indicated otherwise.
- All figures are drawn to scale unless indicated otherwise.
- All figures are in a plane unless indicated otherwise.
- Unless indicated otherwise, the domain of a given function is the set of all real numbers x for which the function has real values.

REFERENCE INFORMATION

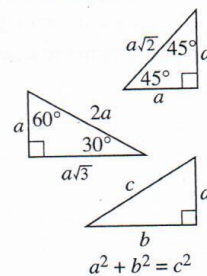
Area Facts



Volume Facts



Triangle Facts



The arc of a circle contains 360° .

The arc of a circle contains 2π radians.

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

GO ON TO THE NEXT PAGE

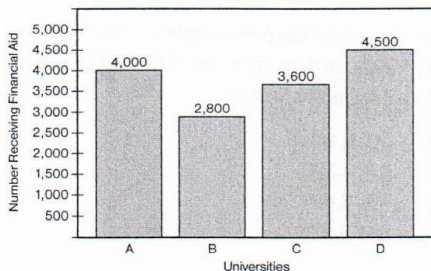
4

1. The estate of a wealthy man was distributed as follows: 10% to his wife, 5% divided equally among his three children, 5% divided equally among his five grandchildren, and the balance to a charitable trust. If the trust received \$1,000,000, how much did each grandchild inherit?
- (A) \$10,000
 (B) \$12,500
 (C) \$20,000
 (D) \$62,500

2. Which of the following statements is true concerning the equation below?

$$\sqrt{x+6} = x$$

- (A) The equation has no solutions.
 (B) The equation has one positive solution.
 (C) The equation has one negative solution.
 (D) The equation has more than one solution.



3. The bar graph above shows the number of students in four universities who received financial aid from the university in 2015. The average size of the financial aid package per student at universities *A*, *B*, *C*, and *D* was \$15,500; \$21,000; \$18,700; and \$14,300, respectively. Which university gave out the greatest total amount of financial aid?
- (A) *A*
 (B) *B*
 (C) *C*
 (D) *D*



4

4. Marie has a website where she sells CDs and DVDs. She purchases her CDs for \$2.75 each and her DVDs for \$5.75 each. Marie pays 95¢ to mail each CD and DVD to her customers. She charges \$4.99 per CD and \$9.99 per DVD plus a postage and handling fee of \$1.75 per CD or DVD. Which of the following represents her profit, P , in dollars, on the sale of x CDs and y DVDs?

- (A) $P = 3.04x + 5.04y$
 (B) $P = 2.24x + 4.24y + 0.80$
 (C) $P = 2.24x + 4.24y + 0.80xy$
 (D) $P = 3.00(x + y) + 0.80(x + y)$

5. There are 25 students in Mrs. Wang's first period algebra class. On Monday, five students were absent and the other 20 students took a test. The average grade for those students was 86. The next day after the five absent students took the test, the class average was 88. What was the average of those five students' grades?

- (A) 90
 (B) 92
 (C) 94
 (D) 96

GO ON TO THE NEXT PAGE



Question 6 is based on the information below.

A survey of 500 registered voters in a certain state was taken to ascertain the number of Democrats, Republicans, and Independents who supported a certain ballot initiative called Proposition 8. The results of that survey are tabulated below.

	Support Proposition 8	Opposed to Proposition 8	Undecided	Total
Democrats	113	32	40	185
Republicans	35	145	30	210
Independents	44	41	20	105
Total	192	218	90	500

6. On Election Day, all of the voters in the survey who had expressed support for the proposition voted for it and all of the voters who had been opposed to the proposition voted against it. If in addition, 80% of those who had been undecided voted for the proposition and 20% voted against it, what percent of the 500 people in the survey voted for the proposition?
- (A) 42.7%
 (B) 47.2%
 (C) 52.8%
 (D) 58.2%

Questions 7–8 are based on the following information.

According to the United States Census Bureau, on average there is a birth in the United States every 8 seconds, a death every 12 seconds, and a net increase of one person due to immigration and emigration every 30 seconds.

7. Which of the following is closest to the average daily increase in the population of the United States?
- (A) 2,280
 (B) 4,260
 (C) 6,480
 (D) 9,520
8. The population of the United States reached 320,000,000 in January of 2015. According to the Census Bureau's analysis, in what year should the country's population reach 350,000,000?
- (A) 2017
 (B) 2022
 (C) 2027
 (D) 2032

GO ON TO THE NEXT PAGE

4

9. In $\triangle ABC$, C is a right angle and $\tan A = 1$. What is the value of $\sin A + \cos A$?

(A) $\frac{\sqrt{2}}{2}$
 (B) 1
 (C) $\sqrt{2}$
 (D) $2\sqrt{2}$

10. The members of the French Club conducted a fund-raising drive. The average (arithmetic mean) amount of money raised per member was \$85. Then Jean joined the club and raised \$50. This lowered the average to \$80. How many members were there before Jean joined?

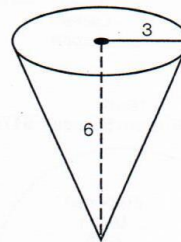
(A) 5
 (B) 6
 (C) 7
 (D) 8



4

11. The cost of renting a van from ABC Rentals is d dollars per day plus c cents per mile. In June, Samantha rented a van for three days and drove it 200 miles. The rental fee was \$210. In July, she paid \$245 to rent a van for one day and drove it 300 miles. What would be the total cost, in dollars, if she were to rent a van for five days during which time she drove 480 miles?

(A) \$430
 (B) \$440
 (C) \$450
 (D) \$460



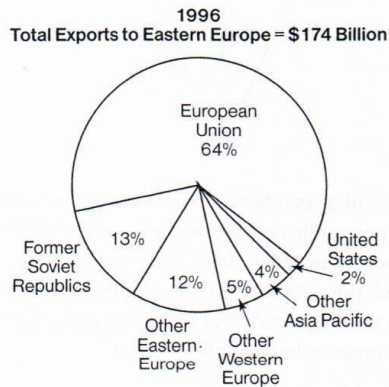
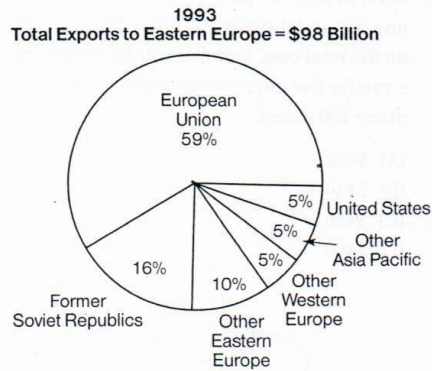
12. The diagram above represents a conical tank whose radius is 3 feet and whose height is 6 feet. If the tank is full of water and if exactly half the water in the tank is poured out, what is the height, to the nearest inch, of the water remaining in the tank?

(A) 36
 (B) 48
 (C) 54
 (D) 57

GO ON TO THE NEXT PAGE



Questions 13–15 are based on the information in the following graphs.



13. Which of the following statements concerning the value of exports to Eastern Europe from other Eastern European countries from 1993 to 1996 is the most accurate?
- (A) They increased by 12%.
 (B) They increased by 20%.
 (C) They increased by 50%.
 (D) They increased by 100%.
14. France is one of the countries in the European Union. If in 1996 France's exports to Eastern Europe were four times those of the United States, then what percent of the European Union's exports to Eastern Europe came from France that year?
- (A) 8%
 (B) 12.5%
 (C) 20%
 (D) 25%
15. If from 1996 to 2000 the percent increase in total exports to Eastern Europe was the same as the percent increase from 1993 to 1996, and the percent of exports from the European Union remained the same as in 1996, to the nearest billion, what was the value, in dollars, of exports from the European Union to Eastern Europe in 2000?
- (A) 188
 (B) 198
 (C) 208
 (D) 218

4

16. The following table shows the hourly wages earned by the 16 employees of a small company and the number of employees who earn each wage.

Wages per Hour	Number of Employees
\$6	3
8	5
10	4
13	4

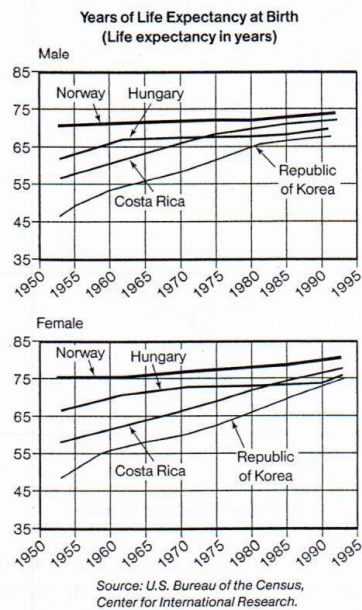
What is the average (arithmetic mean) of the median, the mode, and the range of this set of data?

- (A) 4.5
 (B) 8
 (C) 8.5
 (D) 9
17. Alan's allowance is three times as much as Bob's and one-third as much as Carol's? If their average (arithmetic mean) allowance is \$26, what is Bob's allowance?
- (A) \$6
 (B) \$13
 (C) \$18
 (D) \$26



4

Questions 18–19 are based on the information in the following graphs.



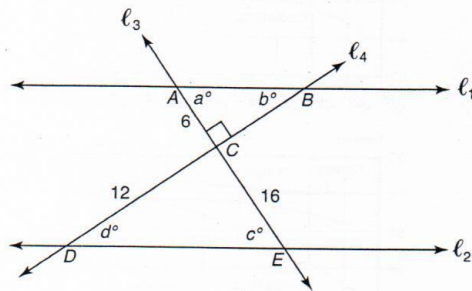
18. For how many of the countries listed in the graphs is it true that the life expectancy of a female born in 1955 was higher than the life expectancy of a male born in 1990?
- (A) 1
 (B) 2
 (C) 3
 (D) 4
19. By sex and nationality, who had the greatest increase in life expectancy between 1955 and 1990?
- (A) Korean females
 (B) Korean males
 (C) Costa Rican females
 (D) Costa Rican males

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4

20. If for all real numbers x , $g(3-x) = x^2 + x + 1$, what is the value of $g(7)$?

(A) 13
 (B) 21
 (C) 57
 (D) 111



Note: Figure not drawn to scale.

21. In the figure above, lines l_1 and l_2 are parallel and lines l_3 and l_4 are perpendicular. What is the perimeter of triangle ABC ?

(A) 18
 (B) 24
 (C) 36
 (D) 48

22. If $i = \sqrt{-1}$ and if $i^n = i$, which of the following could be equal to n ?

(A) 45
 (B) 55
 (C) 75
 (D) 95



4

23. How many pounds of peanuts must be added to a mixture of 20 pounds of peanuts and 50 pounds of cashews if the resulting mixture is to be 60% peanuts by weight?

(A) 30
 (B) 42
 (C) 52
 (D) 55

24. If a sphere and a right circular cone have the same radius and equal volumes, what is the ratio of the height of the cylinder to its radius?

(A) 4
 (B) $\frac{1}{3}\pi$
 (C) $\frac{3}{4}\pi$
 (D) $\frac{4}{3}\pi$

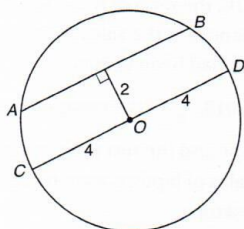
25. In 2000, Jennifer invested \$1,000 in a seven-year Certificate of Deposit (CD) that paid 2% interest, compounded annually. When that CD matured in 2007, she invested all of the money in another seven-year CD, also paying 2% compounded annually, that matured in 2014. To the nearest dollar, how much more money did Jennifer earn from 2007 to 2014 than she did from 2000 to 2007?

(A) \$22
 (B) \$44
 (C) \$149
 (D) \$171

4

26. In a survey of 500 families, each family has at least one child. If 345 of the families have at least one boy and 245 of the families have at least one girl, how many families have only one boy?

- (A) 245
(B) 255
(C) 265
(D) 275



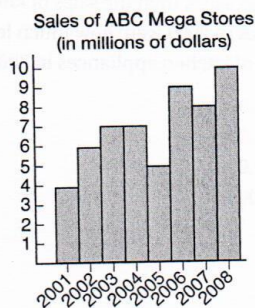
27. In the figure above, chord \overline{AB} is parallel to diameter \overline{CD} . If $CD = 8$ and the distance between \overline{AB} and \overline{CD} is 2, to the nearest hundredth what is the length of AB ?

- (A) 2.83
(B) 3.46
(C) 5.66
(D) 6.93

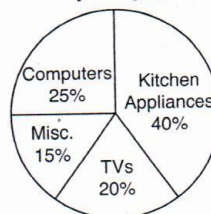


4

Questions 28–30 are based on the information in the following graphs.



2008 Sales of
ABC Mega Stores
by Category



28. In how many years from 2001 through 2008, inclusive, did the sales of ABC Mega Stores exceed the average of the annual sales during that period?

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

GO ON TO THE NEXT PAGE

4

29. If the retail sales of ABC Mega Stores were 20% higher in 2009 than in 2008 and if in 2009 kitchen appliances accounted for 30% of the total sales, then the sales of kitchen appliances in 2009 were how much less than the sales of kitchen appliances in 2008?

- (A) \$400,000
- (B) \$600,000
- (C) \$800,000
- (D) \$1,000,000



4

30. In 2010, the total sales of ABC Mega Stores were exactly the same as in 2008. However, compared with 2008, in 2010 sales of kitchen appliances and TVs were each up by 5% and sales of computers decreased by 10%. Which of the following statements must be true?

- (A) In 2010, the sales of TVs were greater than the sales of computers.
- (B) In 2010, the sales of miscellaneous items were less than in 2008.
- (C) In 2010, the ratio of the sales of kitchen appliances to the sales of TVs was greater than it had been in 2008.
- (D) If in 2010, $\frac{2}{3}$ of the computers sold were laptops and the rest were desktops, then the sales of laptops were twice the sales of desktops.



Grid-in Response Directions

In questions 31–38, first solve the problem, and then enter your answer on the grid provided on the answer sheet. The instructions for entering your answers follow.

- First, write your answer in the boxes at the top of the grid.
- Second, grid your answer in the columns below the boxes.
- Use the fraction bar in the first row or the decimal point in the second row to enter fractions and decimals.

Write your answer in the boxes

Grid in your answer

Answer: $\frac{8}{15}$

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

Answer: 1.75

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

Answer: 100

1	0	0
.	.	.
0	0	0
1	1	1
2	2	2
3	3	3

1	0	0
.	.	.
0	0	0
1	1	1
2	2	2
3	3	3

Either position is acceptable

- Grid only one space in each column.
 - Entering the answer in the boxes is recommended as an aid in gridding but is not required.
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- Enter $1\frac{1}{4}$ as $5/4$ or 1.25 ; the machine will interpret $11/4$ as $\frac{11}{4}$ and mark it wrong.
- All decimals must be entered as accurately as possible.** Here are three acceptable ways of gridding

$$\frac{3}{11} = 0.272727 \dots$$

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

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

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

- Note that rounding to .273 is acceptable because you are using the full grid, but you would receive **no credit** for .3 or .27, because they are less accurate.

4

31. A supermarket just increased the price at which it sells a quart of milk by 20%. How many quarts of milk can now be purchased for the amount of money that used to buy 30 quarts of milk?

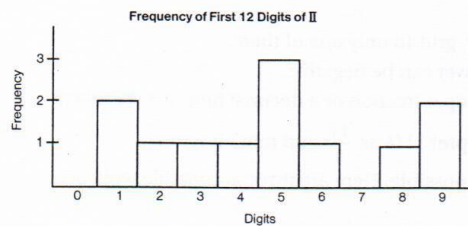


4

34. John is transferring 128 files of various sizes from his computer to a colleague's computer. If the average size of his files is 256 megabytes and he can transfer 1 gigabyte of data every 12 minutes, how long will it take, in hours, to transfer all of the files? (1 gigabyte = 1024 megabytes)

32. The gas mileage for Ken's car is 22 miles per gallon when his car is traveling at 60 miles per hour and is 25 miles per gallon when his car is traveling at 50 miles per hour. Ken will be driving from Boston to New York on a route that is 209 miles long. Gas costs \$3.20 per gallon. How much more, in dollars rounded to the nearest cent, will Ken spend on gas if he drives the entire way at 60 miles per hour than if he drives the entire way at 50 miles per hour?

35. The function f is defined by $f(x) = ax^3 + bx^2 + cx + d$. If the graph of f crosses the x -axis at 1, 2, and 3 and if $a = 1$, what is the value of c ?



33. The decimal expansion of π begins 3.141592653589. The bar graph shown above shows the frequency distribution of the 12 digits to the right of the decimal point in this portion of the expansion of π . What is the average (arithmetic mean) to the nearest tenth of those digits?

36. What is the cosine of the smallest angle in a right triangle whose smallest side is 5 and whose hypotenuse is 10?

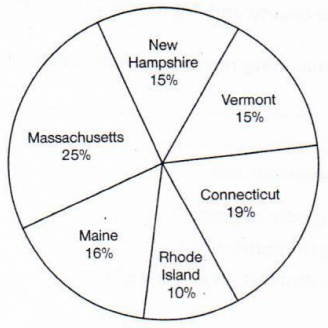
4



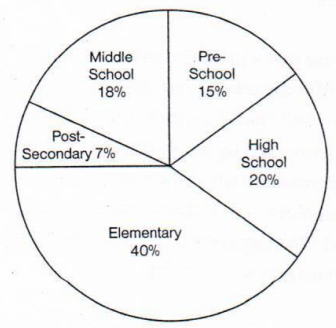
4

Questions 37–38 are based on the data in the following graphs, which give information about the 800 participants at last year's Conference of New England Educators.

Distribution of Home State of Participants



Distribution of Grade Level Taught by Participants from Massachusetts



37. How many of the conference's participants were high school teachers from Massachusetts?

38. If $\frac{4}{15}$ of the participants from states other than Massachusetts were elementary school teachers, what percent of all the participants at the conference taught at the elementary level? (Note: Grid in your answer without the percent sign. For example, if your answer is 15.3%, you should grid in 15.3 on your answer sheet.)



If there is still time remaining, you may review your answers.

MODEL TEST 4

ESSAY (OPTIONAL)

Directions: This assignment will allow you to demonstrate your ability to skillfully read and understand a source text and write a response analyzing the source. In your response, you should show that you have understood the source, give proficient analysis, and use the English language effectively. If your essay is off-topic, it will not be scored.

Only what you write on the lined paper in your answer document will be scored—avoid skipping lines, using unreasonably large handwriting, and using wide margins in order to have sufficient space to respond. You can also write on the planning sheet in the answer document, but this will not be evaluated—no other scrap paper will be given. Be sure to write clearly and legibly so your response can be scored.

You will be given 50 minutes to complete the assignment, including reading the source text and writing your response.

Read the following passage, and think about how the author uses:

- Evidence, such as applicable examples, to justify the argument
- Reasoning to show logical connections among thoughts and facts
- Rhetoric, like sensory language and emotional appeals, to give weight to the argument

Breaking Down Borders

- 1 Sitting in my first International Business course among some three hundred other students, I was surprised at the surplus of hands that shot up when the professor asked how many of us had traveled abroad. *How many of you have visited more than five countries? Ten? Twenty? Thirty?* By this time, only a handful of my peers kept their hands raised. Yet, surrounded by a cohort who wished to pursue careers in global markets, it was not those few avid travelers who stood out as the exception, but the four of us—myself included—who had never traveled abroad. It didn't take me long to see what I was missing; the very next summer I studied abroad. The experience is one that cannot be overstated, and everyone, regardless of major, should pursue it at some point.
- 2 At the forefront of my mandate to spend a semester or two abroad is personal growth. The evidence is empirical: a survey by the Institute for the International Education of Students found that studying abroad was a defining moment in a young person's life that continues to impact them long after their domestic return. In fact, 98% of the 3,400 respondents allowed that their experience abroad had left them with a better understanding of themselves, their cultural values, and their biases. Increased tolerance, compassion, and confidence are a few of the advantages. The individual change that occurs when studying abroad is a dynamic that works from the inside out—you become a better human being and opportunity arises for a better world.
- 3 This has broader relevance. Students who study abroad develop lifelong friendships and learn to embrace difference, along with fostering a crucial tendency to be skeptical of their own predispositions. Likewise, they are more likely to volunteer and work abroad in the future. World

news and politics, human rights advocating, and environmental conservation are just a few of the areas that students tend to become more active after visiting foreign countries. It is these humanitarians whose concern is with the world's welfare that are best equipped in the philanthropic and civic spheres. The importance of these "global citizens" can be imagined most clearly in contrast with the rocky diplomatic relations between today's nations. Study abroad experiences help to train and mold future leaders who can promote universal peace, empathy, and well-being.

- 4 The implications for professional growth are just as impressive. In the above referenced survey, 87% of respondents stated that their study abroad influenced future educational and career experiences. Not only does study abroad help students to find their career path, but it also makes them more appealing to employers. Among the marketable benefits are language skills, an extensive network, cultural adaptability, self-reliance, open-mindedness, and an appreciation for diversity. With the job market becoming increasingly global, these abilities are in high demand, and the job-seeker cannot afford to come to the table empty-handed.
- 5 Many who are hesitant to the rapid changes of a global world argue that there are plenty of opportunities for work and volunteer experience within our own borders. And while this may be true, the suggestion that this retracts value from visiting other countries and other peoples is absurd. The well-rounded and ambitious student will have taken measures to differentiate themselves at home and abroad. Concern at the high cost for travel abroad is equally as viable. Yet, more and more, programs are being initiated to fund, or help fund, studying abroad. Entire departments within colleges nationwide are devoted solely to study abroad opportunities and the funding thereof, not to mention the vast grants and independent scholarships available for the determined. Another surprisingly fruitful option is fundraising—hundreds of websites are designed principally with the goal of making fundraising convenient. It can be as simple as asking for the help of friends and family.
- 6 In the end, increased studying abroad is better for society as a whole. Its popularity coincides with the emergence of an educated, progressive, and thoughtful youth. The expansion of a globally-inclined culture, despite its challenges, is an unmatched occasion for collective welfare and benevolence. The student who says *yes* to experience abroad is investing in him/herself personally and professionally.

Write a response that demonstrates how the author makes an argument to persuade an audience that studying abroad is valuable. In your response, analyze how the author uses at least one of the features from the essay directions (or features of your own choosing) to develop a logical and persuasive argument. Be certain that your response cites relevant aspects of the source text.

Your response should not give your personal opinion on the merit of the source text, but instead show how the author crafts an argument to persuade readers.

ANSWER KEY

Model Test 4

Section 1: Reading

- | | | | |
|-------|-------|-------|-------|
| 1. D | 14. C | 27. D | 40. B |
| 2. D | 15. A | 28. C | 41. C |
| 3. C | 16. D | 29. D | 42. D |
| 4. C | 17. D | 30. D | 43. D |
| 5. A | 18. D | 31. C | 44. B |
| 6. C | 19. C | 32. C | 45. D |
| 7. B | 20. A | 33. D | 46. B |
| 8. D | 21. B | 34. A | 47. B |
| 9. A | 22. B | 35. B | 48. D |
| 10. D | 23. B | 36. A | 49. C |
| 11. C | 24. D | 37. A | 50. D |
| 12. D | 25. B | 38. D | 51. D |
| 13. B | 26. C | 39. A | 52. C |

Number Correct _____

Number Incorrect _____

Section 2: Writing and Language

- | | | | |
|-------|-------|-------|-------|
| 1. A | 12. D | 23. B | 34. C |
| 2. C | 13. A | 24. A | 35. B |
| 3. D | 14. C | 25. A | 36. B |
| 4. D | 15. C | 26. D | 37. A |
| 5. B | 16. A | 27. C | 38. A |
| 6. C | 17. D | 28. D | 39. C |
| 7. A | 18. D | 29. C | 40. B |
| 8. A | 19. B | 30. B | 41. D |
| 9. B | 20. A | 31. A | 42. C |
| 10. C | 21. C | 32. D | 43. D |
| 11. A | 22. B | 33. B | 44. B |

Number Correct _____

Number Incorrect _____

ANSWER KEY

Model Test 4

7096

Section 3: Math (No Calculator)

- | | | | |
|-------------|-------------|--------------|--------------|
| 1. C | 5. A | 9. A | 13. D |
| 2. B | 6. A | 10. B | 14. D |
| 3. B | 7. D | 11. B | 15. D |
| 4. C | 8. D | 12. A | |

16. **2**

			2
○	○	○	○
○	○	○	○
①	①	①	①
②	②	②	●
③	③	③	③
④	④	④	④
⑤	⑤	⑤	⑤
⑥	⑥	⑥	⑥
⑦	⑦	⑦	⑦
⑧	⑧	⑧	⑧
⑨	⑨	⑨	⑨

17. **3**

			3
○	○	○	○
○	○	○	○
①	①	①	①
②	②	②	②
③	③	③	●
④	④	④	④
⑤	⑤	⑤	⑤
⑥	⑥	⑥	⑥
⑦	⑦	⑦	⑦
⑧	⑧	⑧	⑧
⑨	⑨	⑨	⑨

18. **6**

			6
○	○	○	○
○	○	○	○
①	①	①	①
②	②	②	②
③	③	③	③
④	④	④	④
⑤	⑤	⑤	⑤
⑥	⑥	⑥	●
⑦	⑦	⑦	⑦
⑧	⑧	⑧	⑧
⑨	⑨	⑨	⑨

19. **6**

			6
○	○	○	○
○	○	○	○
①	①	①	①
②	②	②	②
③	③	③	③
④	④	④	④
⑤	⑤	⑤	⑤
⑥	⑥	⑥	●
⑦	⑦	⑦	⑦
⑧	⑧	⑧	⑧
⑨	⑨	⑨	⑨

20. **1**

			1
○	○	○	○
○	○	○	○
①	①	①	●
②	②	②	②
③	③	③	③
④	④	④	④
⑤	⑤	⑤	⑤
⑥	⑥	⑥	⑥
⑦	⑦	⑦	⑦
⑧	⑧	⑧	⑧
⑨	⑨	⑨	⑨

Number Correct _____

Number Incorrect _____

MODEL TEST 4

ANSWER KEY

Model Test 4

Section 4: Math (Calculator)

- | | | | | |
|-------------|--------------|--------------|--------------|--------------|
| 1. B | 7. C | 13. D | 19. A | 25. A |
| 2. B | 8. C | 14. B | 20. A | 26. B |
| 3. C | 9. C | 15. B | 21. A | 27. D |
| 4. A | 10. B | 16. B | 22. A | 28. A |
| 5. D | 11. D | 17. A | 23. D | 29. A |
| 6. C | 12. D | 18. A | 24. A | 30. B |

31. **25**

			2	5
<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	1	0	0	0
2	2	0	0	0
3	3	0	0	0
4	4	0	0	0
5	5	0	0	0
6	6	0	0	0
7	7	0	0	0
8	8	0	0	0
9	9	0	0	0

32. **3.65**

	3	.	6	5
<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9

33. **4.8**

	4	.	8
<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

34. **6.4**

	6	.	4
<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

35. **11**

		1	1
<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
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2	2	0	0
3	3	0	0
4	4	0	0
5	5	0	0
6	6	0	0
7	7	0	0
8	8	0	0
9	9	0	0

36. **.866**

	.	8	6	6
<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
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2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9

37. **40**

		4	0
<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

38. **30**

		3	0
<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

Number Correct _____

Number Incorrect _____