



Chapter 13

Practice Test 1

Reading Test

60 MINUTES, 47 QUESTIONS

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

DIRECTIONS

Each passage or pair of passages below is followed by a number of questions. After reading each passage or pair, choose the best answer to each question based on what is stated or implied in the passage or passages and in any accompanying graphics (such as a table or graph).

Questions 1–9 are based on the following passage.

The following is an excerpt from a novel by Thomas Hardy published in 1878. This portion speaks about a man named Clym Yeobright who has recently returned to his hometown, Egdon Heath.

In Clym Yeobright's face could be dimly seen the typical countenance of the future. The observer's eye was arrested, not by his face as a picture, but by his face
 Line as a page; not by what it was, but by what it recorded.
 5 His features were attractive in the light of symbols, as sounds intrinsically common become attractive in language, and as shapes intrinsically simple become interesting in writing.

He had been a lad of whom something was
 10 expected. Beyond this all had been chaos. That he would be successful in an original way, or that he would go to the dogs in an original way, seemed equally probable. The only absolute certainty about him was that he would not stand still in the
 15 circumstances amid which he was born.

Hence, when his name was casually mentioned by neighbouring yeomen, the listener said, "Ah, Clym Yeobright—what is he doing now?" When the instinctive question about a person is, What is
 20 he doing? it is felt that he will be found to be, like most of us, doing nothing in particular. There is an indefinite sense that he must be invading some region of singularity, good or bad. The devout hope is that he is doing well. The secret faith is that he is making
 25 a mess of it. Half a dozen comfortable market-men, who were habitual callers at the Quiet Woman as they passed by in their carts, were partial to the topic. In

fact, though they were not Egdon men, they could hardly avoid it while they sucked their long clay tubes
 30 and regarded the heath through the window. Clym had been so inwoven with the heath in his boyhood that hardly anybody could look upon it without thinking of him. So the subject recurred: if he were making a fortune and a name, so much the better for him; if he
 35 were making a tragical figure in the world, so much the better for a narrative.

The fact was that Yeobright's fame had spread to an awkward extent before he left home. "It is bad when your fame outruns your means," said the Spanish Jesuit
 40 Gracian. At the age of six he had asked a Scripture riddle: "Who was the first man known to wear breeches?" and applause had resounded from the very verge of the heath. At seven he painted the Battle of Waterloo with tiger-lily pollen and black-currant juice,
 45 in the absence of water-colours. By the time he reached twelve he had in this manner been heard of as artist and scholar for at least two miles round. An individual whose fame spreads three or four thousand yards in the time taken by the fame of others similarly situated
 50 to travel six or eight hundred, must of necessity have something in him. Possibly Clym's fame, like Homer's, owed something to the accidents of his situation; nevertheless famous he was. He grew up and went to London; and thence, shortly after, to Paris, where he
 55 had remained till now.

Something being expected of him, he had not been at home many days before a great curiosity as to why he stayed on so long began to arise in the heath.

CONTINUE

The natural term of a holiday had passed, yet he still
60 remained.

Was Yeobright's mind well-proportioned? No. A well-proportioned mind is one which shows no particular bias; its usual blessings are happiness and mediocrity. It enables its possessors to find their way
65 to wealth, to wind up well, to step with dignity off the stage, to die comfortably in their beds, and to get the decent monument which, in many cases, they deserve. It never would have allowed Yeobright to do such a ridiculous thing as throw up his business to benefit his
70 fellow-creatures.

He walked along towards home without attending to paths. If anyone knew the heath well it was Clym. He was permeated with its scenes, with its substance, and with its odours. He might be said to be its product.
75 His eyes had first opened thereon; with its appearance all the first images of his memory were mingled, his estimate of life had been coloured by it: his toys had been the flint knives and arrow-heads which he found there, wondering why stones should "grow" to such
80 odd shapes; his flowers, the purple bells and yellow furze: his animal kingdom, the snakes and croppers; his society, its human haunters. He gazed upon the wide prospect as he walked, and was glad.

1

The passage most strongly suggests that which of the following is true of Clym?

- A) The locals support him, which has bolstered his achievement.
- B) He is not going to return to Paris because his fame was all accidental.
- C) His religious upbringing prepared him well for prosperity.
- D) He was expected to either prosper or fail but not to be mired in anything banal.

2

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

- A) Lines 10–15 ("That he . . . born")
- B) Lines 40–43 ("At the age . . . heath")
- C) Lines 51–55 ("Possibly . . . now")
- D) Lines 61–64 ("Was . . . mediocrity")

3

As used in line 3, "arrested" most nearly means

- A) indicted.
- B) engaged.
- C) forced.
- D) charged.

4

The author uses the quote ("It is bad . . . your means") in lines 38–39 primarily to suggest that

- A) Clym may not live up to the people of his hometown's expectations, despite relatively widespread fame.
- B) Clym has used his fame to his advantage for too long and now people are beginning to bore of him.
- C) Clym has run out of money and can no longer support his luxurious European lifestyle.
- D) Clym can never live up to his own notoriety.

5

The fifth paragraph (lines 56–60) primarily serves to

- A) show the townspeople's frustration that Clym won't go back to Paris.
- B) underscore that Clym's extended return is incongruous with someone of his potential.
- C) provide an example of the locals' intrusive presence in Clym's life.
- D) prove that Clym's illustriousness has spread to an awkward extent.

6

As used in line 52, "accidents" most nearly means

- A) crashes.
- B) slips.
- C) chance.
- D) trauma.

CONTINUE 

7

Based on the information in the passage, Yeobright is known chiefly for his

- A) vast wealth and reputation overseas.
- B) sweeping acclaim and abundant promise.
- C) unique aesthetic features and tragic circumstances.
- D) aptitude as a scholar and preacher.

8

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

- A) Lines 1–4 (“In Clym . . . recorded”)
- B) Lines 45–47 (“By the time . . . round”)
- C) Lines 47–51 (“An individual . . . in him”)
- D) Lines 53–55 (“He grew . . . now”)

9

The comparison in lines 6–8 (“as sounds . . . writing”) is most similar to which of the following?

- A) The allure of the color yellow becoming stronger in a painting of a sunrise versus on the palette
- B) A beautiful dress that looks beautiful worn and on the hanger
- C) A phrase in another language causing confusion until it is translated
- D) Diamond rings that are more attractive than ruby rings

CONTINUE 

Questions 10–18 are based on the following passage.

This passage is adapted from Michael Pollan, *The Botany of Desire*. © 2001 by Michael Pollan.

The modern tulip has become such a cheap and ubiquitous commodity that it's hard for us to recover a sense of the glamour that once surrounded the flower. That glamour surely had something to do with its roots in the Orient—Anna Pavord speaks of the “intoxicating aura of the infidels” that surrounded the tulip. There was, too, the preciousness of the early tulips, the supply of which could be increased only very slowly through offsets, a quirk of biology that kept supply well behind demand. In France in 1608, a miller exchanged his mill for a bulb of Mère Brune. Around the same time a bridegroom accepted a single tulip as the whole of his dowry—happily, we are told; the variety became known as “Marriage de ma fille.”

Yet tulipomania in France and England never reached the pitch it would in Holland. How can the mad embrace of these particular people and this particular flower be explained?

For good reason, the Dutch have never been content to accept nature as they found it. Lacking in conventional charms and variety, the landscape of the Low Countries is spectacularly flat, monotonous, and swampy. “An universal quagmire” is how one Englishman described the place; “the buttock of the world.” What beauty there is in the Netherlands is largely the result of human effort: the dikes and canals built to drain the land, the windmills erected to interrupt the unbroken sweep of wind across it. In his famous essay on tulipomania, “The Bitter Smell of Tulips,” the poet Zbigniew Herbert suggests that the “monotony of the Dutch landscape gave rise to dreams of multifarious, colorful, and unusual flora.”

Such dreams could be indulged as never before in seventeenth-century Holland, as Dutch traders and plant explorers returned home with a parade of exotic new plant species. Botany became a national pastime followed as closely and avidly as we follow sports today. This was a nation, and a time, in which a botanical treatise could become a best-seller and a plantsman like Clusius a celebrity.

Land in Holland being so scarce and expensive, Dutch gardens were miniatures, measured in square feet rather than acres and frequently augmented with mirrors. The Dutch thought of their gardens as jewel

boxes, and in such a space even a single flower—and especially one as erect, singular, and strikingly colored as a tulip—could make a powerful statement.

To make such statements—about one's sophistication, about one's wealth—has always been one of the reasons people plant gardens. In the seventeenth century the Dutch were the richest people in Europe and, as the historian Simon Schama shows in *The Embarrassment of Riches*, their Calvinist faith did not keep them from indulging in the pleasures of conspicuous display. The exoticism and expense of tulips certainly recommended them for this purpose, but so did the fact that, among flowers, the tulip is one of the most extravagantly useless. Up until the Renaissance, most of the flowers in cultivation had been useful as well as beautiful; they were sources of medicine, perfume, or even food. In the West flowers have often come under attack from various Puritans, and what has always saved them has been their practical uses. It was utility, not beauty, that earned the rose and lily, the peony and all the rest a spot in the gardens of monks and Shakers and colonial Americans who would otherwise have had nothing to do with them.

When the tulip first arrived in Europe, people set about fashioning some utilitarian purpose for it. The Germans boiled and sugared the bulbs and, unconvincingly, declared them a delicacy; the English tried serving them up with oil and vinegar. Pharmacists proposed the tulip as a remedy for flatulence. None of these uses caught on, however. “The tulip remained itself,” Herbert writes, “the poetry of Nature to which vulgar utilitarianism is foreign.” The tulip was a thing of beauty, no more, no less.

10

The passage suggests that in seventeenth-century Europe, tulips were prized primarily for their

- A) intoxicating scent.
- B) exotic botany.
- C) extravagant beauty.
- D) medicinal qualities.

CONTINUE 

11

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

- A) Lines 4–7 (“That glamour . . . tulip”)
- B) Lines 33–36 (“Such dreams . . . species”)
- C) Lines 74–75 (“Pharmacists . . . flatulence”)
- D) Lines 77–78 (“The tulip . . . less”)

12

As used in line 16, “pitch” most nearly means

- A) throw.
- B) angle.
- C) level.
- D) promotion.

13

The author uses the word “spectacularly” (line 22) in order to

- A) emphasize the beauty to be found in the flat landscape of the Low Countries.
- B) highlight the monotonous nature of the Dutch landscape.
- C) maintain the tone of irony used to describe the Dutch attitude toward their land.
- D) underscore the importance of human efforts to make the Low Countries beautiful.

14

The primary purpose of the fourth paragraph (lines 33–40) is to

- A) illustrate the widespread popularity of botany in seventeenth-century Holland.
- B) indicate that the Dutch landscape is as flat as a baseball field.
- C) provide an example to show the relative lack of fame of Dutch traders and plantsmen.
- D) introduce a metaphor supporting the idea that the Dutch obsession for tulips was unusually strong.

15

It can be inferred from the passage that seventeenth-century Dutch gardens were

- A) as small as jewel boxes.
- B) indicators of wealth and sophistication.
- C) full of exotic and expensive flowers.
- D) often adorned by only a single flower.

16

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

- A) Lines 41–44 (“Land . . . mirrors”)
- B) Lines 48–50 (“To make . . . gardens”)
- C) Lines 69–71 (“When . . . it”)
- D) Lines 74–75 (“Pharmacists . . . however”)

17

As used in line 70, “utilitarian” most nearly means

- A) practical.
- B) industrial.
- C) culinary.
- D) decorative.

18

It can reasonably be inferred from the passage that the characteristic that makes the tulip most different from a rose or a lily is its

- A) price.
- B) exoticism.
- C) beauty.
- D) uselessness.



Questions 19–28 are based on the following passage and supplementary material.

This passage is adapted from Harriet H. Robinson, “Early Factory Labor in New England,” in Massachusetts Bureau of Statistics of Labor, *Fourteenth Annual Report* (Boston: Wright & Potter, 1883). Robinson was a mill-worker, writer, and social activist who played a prominent role in the labor and women’s suffrage movements in the United States.

In 1832, Lowell was little more than a factory village. Five “corporations” were started, and the cotton mills belonging to them were building. Help was in
 Line great demand and stories were told all over the country
 5 of the new factory place, and the high wages that were offered to all classes of workpeople; stories that reached the ears of mechanics’ and farmers’ sons and gave new life to lonely and dependent women in distant towns and farmhouses. Troops of young girls came from
 10 different parts of New England, and from Canada, and men were employed to collect them at so much a head, and deliver them at the factories.

At the time the Lowell cotton mills were started, the caste of the factory girl was the lowest among the
 15 employments of women. In England and in France, particularly, great injustice had been done to her real character. She was represented as subjected to influences that must destroy her purity and self-respect. In the eyes of her overseer she was but a brute,
 20 a slave, to be beaten, pinched and pushed about. It was to overcome this prejudice that such high wages had been offered to women that they might be induced to become millgirls, in spite of the opprobrium that still clung to this degrading occupation.

The early millgirls were of different ages. Some were not over ten years old; a few were in middle life, but the majority were between the ages of sixteen and twenty-five. The very young girls were called “doffers.” They “doffed,” or took off, the full bobbins from the
 30 spinningframes, and replaced them with empty ones. These mites worked about fifteen minutes every hour and the rest of the time was their own. When the overseer was kind they were allowed to read, knit, or go outside the millyard to play. They were paid
 35 two dollars a week. The working hours of all the girls extended from five o’clock in the morning until seven in the evening, with one halfhour each, for breakfast and dinner. Even the doffers were forced to be on duty nearly fourteen hours a day. This was the greatest
 40 hardship in the lives of these children. Several years

later a tenhour law was passed, but not until long after some of these little doffers were old enough to appear before the legislative committee on the subject, and plead, by their presence, for a reduction of the hours of
 45 labor.

Those of the millgirls who had homes generally worked from eight to ten months in the year; the rest of the time was spent with parents or friends. A few taught school during the summer months. Their life in
 50 the factory was made pleasant to them. In those days there was no need of advocating the doctrine of the proper relation between employer and employed. Help was too valuable to be ill-treated.

The most prevailing incentive to labor was to
 55 secure the means of education for some male member of the family. To make a gentleman of a brother or a son, to give him a college education, was the dominant thought in the minds of a great many of the better class of millgirls. I have known more than one to give
 60 every cent of her wages, month after month, to her brother, that he might get the education necessary to enter some profession. I have known a mother to work years in this way for her boy. I have known women to educate young men by their earnings, who were not
 65 sons or relatives. There are many men now living who were helped to an education by the wages of the early millgirls.

CONTINUE 

The table below shows the daily schedule for workers at the Lowell Mills in 1851.

TIME TABLE OF THE LOWELL MILLS, To take effect on and after October 21st, 1851.												
The Standard time being that of the meridian of Lowell, as shown by the regulator clock of JOSEPH RAYNES, 43 Central Street												
	From 1st to 10th inclusive				From 11th to 20th inclusive				From 21st to last day of month			
	1st Bell	2d Bell	3d Bell	Eve. Bell	1st Bell	2d Bell	3d Bell	Eve. Bell	1st Bell	2d Bell	3d Bell	Eve. Bell
January	5.00	6.00	6.50	*7.30	5.00	6.00	6.50	*7.30	5.00	6.00	6.50	*7.30
February	4.30	5.30	6.40	*7.30	4.30	5.30	6.25	*7.30	4.30	5.30	6.15	*7.30
March	5.40	6.00		*7.30	5.20	5.40		*7.30	5.05	5.25		6.35
April	4.45	5.05		6.45	4.30	4.50		6.55	4.30	4.50		7.00
May	4.30	4.50		7.00	4.30	4.50		7.00	4.30	4.50		7.00
June												
July												
August												
September	4.40	5.00		6.45	4.50	5.10		6.30	5.00	5.20		*7.30
October	5.10	5.30		*7.30	5.20	5.40		*7.30	5.35	5.55		*7.30
November	4.30	5.30	6.10	*7.30	4.30	5.30	6.20	*7.30	5.00	6.00	6.35	*7.30
December	5.00	6.00	6.45	*7.30	5.00	6.00	6.50	*7.30	5.00	6.00	6.50	*7.30

*Escaping on Saturdays from Sept. 21st to March 20th inclusive, when it is rung at 20 minutes after sunset.

19

The perspective from which Robinson writes is best described as that of

- A) a disinterested observer.
- B) a passionate advocate.
- C) an irate troublemaker.
- D) a carefree eyewitness.

20

In lines 3–12 (“Help . . . factories”), Robinson explicitly cites which of the following as a reason that women moved to Lowell to work in the cotton mills?

- A) The opportunity to live in a more appealing climate
- B) The appeal of generous vacation time
- C) The chance to enjoy the company of a diverse array of coworkers
- D) The promise of attractive remuneration

21

In the context of the passage as a whole, the author most likely mentions the working conditions of England and France (beginning in line 15) in order to

- A) demonstrate the superiority of European factory work.
- B) provide a historical overview of the Industrial Revolution.
- C) draw a contrast between those conditions and the conditions promised to workers in the Lowell mills.
- D) argue that American factories should follow the European model.

22

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

- A) Lines 1–2 (“In . . . village”)
- B) Lines 9–12 (“Troops . . . factories”)
- C) Lines 20–24 (“It . . . occupation”)
- D) Lines 46–48 (“Those . . . friends”)

CONTINUE 

23

As used in line 23, “opprobrium” most nearly means

- A) disgrace.
- B) praise.
- C) benevolence.
- D) trauma.

24

The passage suggests which of the following about the youngest girls employed at the Lowell mills?

- A) They had complete freedom to spend their time as they chose.
- B) They spent the majority of their time in educational settings.
- C) They ranged in age from 10–16 years old.
- D) They were afforded more leisure time than were the older girls and adult women.

25

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

- A) Lines 29–30 (“They . . . ones”)
- B) Lines 31–34 (“These . . . play”)
- C) Lines 48–49 (“A few . . . months”)
- D) Lines 54–56 (“The most . . . family”)

26

The information in the table provided most supports which of the following claims made in the passage?

- A) Women working in the mills were forced to be on duty nearly fourteen hours per day.
- B) There were five growing corporations in Lowell in 1832.
- C) Many of the millgirls gave some or all of the wages that they earned to male family members.
- D) The idea of working in the mills gave new life to girls and women living in isolated towns across North America.

27

As used in line 54, “prevailing” most nearly means

- A) conquering.
- B) current.
- C) predominant.
- D) rare.

28

Which of the following best represents the main idea of the last paragraph (lines 54–67)?

- A) The early female mill-workers in Lowell were universally contemptuous of their male relatives.
- B) Providing financial resources for their male relatives’ education was commonplace among the early female mill-workers in Lowell.
- C) A college education is the surest way to achieve the status of a gentleman.
- D) The primary reason that middle-aged women worked in the Lowell mills was to provide financial resources for their daughters.



Questions 29–37 are based on the following passage and supplementary material.

This passage is adapted from Laurel Woodruff and George Bedinger, “Titanium: Light, Strong, and White” in the U.S. Geological Survey’s 2013 Fact Sheet.

Titanium (Ti) is a strong silver-gray metal that is highly resistant to corrosion and is chemically inert. It is as strong as steel but 45 percent lighter, and it is twice as strong as aluminum but only 60 percent heavier. Titanium dioxide (TiO₂) has a very high refractive index, which means that it has high light-scattering ability. As a result, TiO₂ imparts whiteness, opacity, and brightness to many products.

Titanium was first discovered in 1791 by the British clergyman and amateur geologist William Gregor, who produced a white metallic oxide from black magnetic sands. In 1795, the German chemist Martin Klaproth named the oxide “titanium” after the Greek *Titans*, a mythical race of immortal giants with incredible strength and stamina. Pure titanium metal was first isolated in 1910 by chemist Matthew Hunter. Hunter’s difficult isolation process made titanium metal mainly a laboratory curiosity until 1938 when William Kroll developed a method (known as the Kroll method) to produce titanium metal in commercial quantities. Because of the unique physical properties of titanium metal and the whiteness provided by TiO₂, titanium is now used widely in modern industrial societies.

Most titanium ore is refined into TiO₂ to impart a durable white color to paint, paper, rubber, wallboard, and plastic. The paint industry began using TiO₂ because of concerns about the environmental hazards related to the use of lead in paint. Because TiO₂ is relatively inert, it can also be used as coloring in such products as toothpaste, skim milk, candy, and sunscreen.

Only about 5 percent of the world’s annual production of titanium minerals goes to make titanium metal. The high strength-to-weight ratio and corrosion resistance of titanium metal and its alloys make them particularly valuable to the aerospace industry. Because titanium metal is nonreactive in the human body, it is also used to make artificial hip joints, pins for setting bones, and other types of biological implants.

Titanium is the ninth most abundant element in the Earth’s crust and can be found in nearly all rocks. The economic viability of a titanium deposit is

determined by the grade and available tonnage, as well as the deposit type and titanium mineralogy.

The most economically important titanium minerals are ilmenite (which is a titanium-iron oxide that crystallizes at high temperatures from magma) and two TiO₂ polymorphs, rutile and anatase (which have the same chemical composition but different crystal structures). Ninety percent of the world’s titanium is accounted for by ilmenite, but because rutile has a very high index of refraction, it is the most desirable mineral for the pigment industry.

Economic high-grade magmatic ilmenite deposits are found in particular rock types. These deposits develop by crystallization of ilmenite from titanium- and iron-enriched magmas. Segregation and emplacement of these early ilmenite-laden liquids are likely related to dynamic magmatic processes accompanying the emplacement of anorthosite (a plagioclase-rich rock) and related mafic rocks. Magmatic ilmenite is currently being mined at the Lac Tio mine in Quebec, Canada, and at Tellnes, a large open pit mine in southern Norway.

The table below shows the percent distribution of titanium pigment in various U.S. industries.

Industry	2011	2012
Paint, varnish, lacquer	58.5	59.8
Paper	8.6	10.6
Plastics and rubber	27.9	24.6
Other ²	5.0	5.0
Total	100.0	100.0

¹ Excludes exports.
² Includes agricultural, building materials, ceramics, coated fabrics and textiles, cosmetics, food, and printing ink. Also includes shipments to distributors.

CONTINUE 

29

The authors state that which of the following characteristics of titanium accounts for its ability to impart white coloring and brightness to objects?

- A) Its resistance to corrosion
- B) Its relatively light weight
- C) Its natural abundance
- D) Its high refractive index

30

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

- A) Lines 5–8 (“Titanium . . . products”)
- B) Lines 15–20 (“Pure . . . quantities”)
- C) Lines 32–36 (“Only . . . industry”)
- D) Lines 40–44 (“Titanium . . . mineralogy”)

31

As used in line 18, “curiosity” most nearly means

- A) oddity.
- B) inquisitiveness.
- C) eagerness.
- D) desire.

32

The information presented in the table above supports which of the following claims made in the passage?

- A) High-grade magmatic ilmenite deposits are developed by magma crystallization in particular rock types.
- B) Titanium dioxide imparts opacity and brightness to many products.
- C) Most titanium dioxide is used in products such as paint, paper, rubber, wallboard, and plastic.
- D) The economic viability of a titanium deposit is determined primarily by quality and weight.

33

The authors claim that the use of titanium in certain products is preferable to that of lead because of lead’s dangerous health effects. Do the authors support the idea that titanium is safe for human use with specific reasons and/or examples?

- A) Yes, because the authors note that titanium was first discovered in 1791 and that pure titanium metal was first isolated in 1901.
- B) Yes, because the authors note that titanium’s relative inertness makes it safe for use in toothpaste, milk, and sunscreen and that its non-reactiveness in the human body makes it safe for use in medical procedures.
- C) No, because the authors describe a large open pit mine in Norway and imply that mining titanium in such conditions is potentially hazardous to human health.
- D) No, because the authors claim that titanium is safe for use in certain products used by humans but do not support that claim with any reasons or examples.

34

As used in line 35, “resistance” most nearly means

- A) safeguard.
- B) support.
- C) blocking.
- D) struggle.

35

The authors compare titanium metal to steel and aluminum in order to

- A) show a specific way in which titanium imparts brightness and opacity to objects.
- B) prove that titanium is stronger than all other metals.
- C) provide an illustration of titanium’s strength and lightness relative to certain other metals.
- D) highlight the particularly abundant nature of titanium as a renewable resource that can be easily mined.

CONTINUE 

36

It can be inferred from the passage that the form of titanium most useful to the manufacturing of paint products is

- A) rutile.
- B) ilmenite.
- C) anatase.
- D) titanium metal.

37

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

- A) Lines 1–5 (“Titanium . . . heavier”)
- B) Lines 50–53 (“Ninety . . . industry”)
- C) Lines 54–55 (“Economic . . . types”)
- D) Lines 62–64 (“Magmatic . . . Norway”)

CONTINUE 

Questions 38–47 are based on the following passages.

Passage 1 is adapted from “A Wandering Mind Reveals Mental Processes and Priorities.” Copyright, University of Wisconsin-Madison. March 2012. Reprinted with permission. Passage 2 is excerpted from Josie Glausiusz, “Living in an Imaginary World.” Reproduced with permission. Copyright © 2014 Scientific American, a division of Nature America, Inc. All rights reserved.

Passage 1

In an experiment—designed and executed by Prof. Bar’s post-doctoral researcher Dr. Vadim Axelrod—participants were treated with transcranial direct current stimulation (tDCS), a procedure that uses low-level electricity to stimulate specific brain regions. “We focused tDCS stimulation on the frontal lobes because this brain region has been previously implicated in mind wandering, and also because it is a central locus of the executive control network that allows us to organize and plan for the future,” Bar explains.

The researchers used tDCS to stimulate the occipital cortex—the visual processing center in the back of the brain. They also conducted control studies where no tDCS was used.

While the self-reported incidence of mind wandering was unchanged in the case of occipital and sham stimulation, it rose considerably when this stimulation was applied to the frontal lobes. “Our results demonstrate that the frontal lobes play a causal role in the production of mind wandering behavior.”

In an unanticipated finding, the present study demonstrated how the increased mind wandering behavior produced by external stimulation not only does not harm subjects’ ability to succeed at an appointed task, it actually helps. Bar believes that this surprising result might stem from the convergence, within a single brain region, of both the “thought controlling” mechanisms of executive function and the “thought freeing” activity of spontaneous, self-directed daydreams.

“Over the last 15 or 20 years, scientists have shown that mind wandering involves the activation of a gigantic default network involving many parts of the brain,” Bar says. “This cross-brain involvement may be involved in behavioral outcomes such as creativity and mood, and may also contribute to the ability to stay successfully on-task while the mind goes off on its merry mental way.”

While it is commonly assumed that people have a finite cognitive capacity for paying attention, Bar says that the present study suggests that the truth may be more complicated. “Interestingly, while our study’s external stimulation increased the incidence of mind wandering, rather than reducing the subjects’ ability to complete the task, it caused task performance to become slightly improved. The external stimulation actually enhanced the subjects’ cognitive capacity.”

Passage 2

Some researchers believe that increasing the amount of imaginative daydreaming we do or replaying variants of the millions of events we store in our brain can be beneficial. A painful procedure in a doctor’s office, for example, can be made less distressing by visualizations of soothing scenes from childhood.

Yet to enhance creativity, it is important to pay attention to daydreams. Psychologist Jonathan W. Schooler of the University of California, Santa Barbara calls this “tuning out” or deliberate “off-task thinking.” In an as yet unpublished study, he and his colleague Jonathan Smallwood asked 122 undergraduates at the University of British Columbia to read a children’s story and press a button each time they caught themselves tuning out. The researchers also periodically interrupted the students as they were reading and asked them if they were “zoning out” or drifting off without being aware of it. “What we find is that the people who regularly catch themselves—who notice when they’re doing it—seem to be the most creative,” Schooler says. Such subjects score higher on a standard test of creativity, in which they are asked to describe all the uses of a common object, such as a brick; high scorers compile a longer and more creative list. “You need to have the mind-wandering process,” he explains, “but you also need to have meta-awareness to say, ‘That’s a creative idea that popped into my mind.’”

The mind’s freedom to wander during a period of deliberate tuning out could also explain the flash of insight that may pop into a person’s head when he or she takes a break from an unsolved problem. Ut Na Sio and Thomas Ormerod, two researchers at the University of Lancaster in England, conducted a recent meta-analysis of studies of these brief reveries. They

CONTINUE 

found that people who engaged in a mildly demanding task, such as reading, during a break from, say, a visual assignment, such as the hat-rack problem—in which participants have to construct a sturdy hat rack using two boards and a clamp—did better on that problem than those who did nothing at all. They also scored higher than those engaged in a highly demanding task—such as mentally rotating shapes—during the interval. Allowing our mind to ramble during a moderately challenging task, it seems, enables us to access ideas not easily available to our conscious mind or to combine these insights in original ways. Our ability to do so is now known to depend on the normal functioning of a dedicated daydreaming network deep in our brain.

38

Based on the information in Passage 1, it can be reasonably inferred that mind wandering

- A) is caused by the occipital lobes.
- B) depends on interaction among all parts of the brain.
- C) reacts to a sham stimulation.
- D) is initiated by the frontal lobes.

39

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

- A) Lines 1–5 (“In an . . . regions”)
- B) Lines 11–13 (“The researchers . . . brain”)
- C) Lines 18–20 (“Our . . . behavior”)
- D) Lines 25–30 (“Bar . . . daydreams”)

40

As used in line 26, “stem” most nearly means

- A) branch.
- B) originate.
- C) contain.
- D) restrain.

41

The author of Passage 2 mentions “a painful procedure in a doctor’s office” in lines 51–52 in order to

- A) provide a personal example to illustrate an abstract concept.
- B) trigger a certain memory for her readers.
- C) suggest a location for enhancing creativity.
- D) offer a specific illustration of a general statement.

42

As used in line 63, “caught” most nearly means

- A) detected.
- B) entangled.
- C) developed.
- D) overtook.

43

Passage 2 most clearly suggests that daydreaming

- A) is the only way to solve a difficult problem.
- B) often occurs during visits to the doctor’s office.
- C) can enhance creativity if an individual is aware of it.
- D) has no discernible benefits.

44

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

- A) Lines 48–51 (“Some researchers . . . beneficial”)
- B) Lines 56–59 (“Psychologist . . . off-task thinking”)
- C) Lines 66–69 (“What we . . . creative”)
- D) Lines 77–80 (“The mind’s . . . problem”)



45

Which specific point is made in Passage 1 but not in Passage 2? Passage 1

- A) correlates mind wandering with intelligence.
- B) lists everyday activities that people do while experiencing mind wandering.
- C) delineates the regions of the brain activated during mind wandering.
- D) describes specific details of mind wandering research.

46

The authors of both passages would most likely agree with which of the following?

- A) Outside stimuli inevitably leads to mind wandering.
- B) Mind wandering does not impede the completion of certain tasks.
- C) Mind wandering elicits creativity and passion.
- D) Intelligent people have exclusively internally-driven thoughts.

47

In which lines does the author of Passage 2 most directly corroborate the conclusion about external stimulation on concentration as presented in Passage 1?

- A) Lines 51–54 (“A painful . . . childhood”)
- B) Lines 59–63 (“In an . . . tuning out”)
- C) Lines 73–76 (“You need . . . mind”)
- D) Lines 83–89 (“They found . . . all”)

STOP

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

Writing and Language Test

35 MINUTES, 44 QUESTIONS

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

DIRECTIONS

Each passage below is accompanied by a number of questions. For some questions, you will consider how the passage might be revised to improve the expression of ideas. For other questions, you will consider how the passage might be edited to correct errors in sentence structure, usage, or punctuation. A passage or a question may be accompanied by one or more graphics (such as a table or graph) that you will consider as you make revising and editing decisions.

Some questions will direct you to an underlined portion of a passage. Other questions will direct you to a location in a passage or ask you to think about the passage as a whole.

After reading each passage, choose the answer to each question that most effectively improves the quality of writing in the passage or that makes the passage conform to the conventions of standard written English. Many questions include a “NO CHANGE” option. Choose that option if you think the best choice is to leave the relevant portion of the passage as it is.

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

Supply and Demand

Many parents and students have become concerned that exorbitant college university tuitions are not worth the investment. [A] In response, colleges have not lowered tuitions (quite the contrary), but they have become more sensitive to the connection between university education and eventual employment. **1** Schools are beginning to answer the call for job skills and hire-ability rather than the traditional hallmarks of university education.

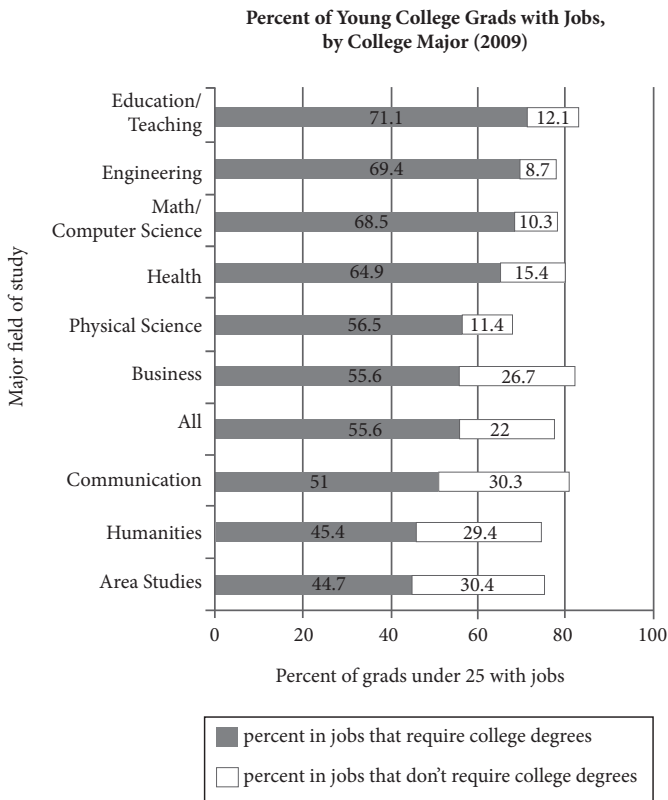
1

If the writer were to delete the parenthetical phrase *quite the contrary* from the previous sentence, the sentence would primarily lose

- A) an indication on the part of the author that his college tuition was relatively low.
- B) a reminder that college tuitions have in fact been rising.
- C) a troubling reminder that college is simply too expensive for many who want to go.
- D) nothing at all, because the information is given elsewhere in the paragraph.

CONTINUE

Graphs like the one shown below measure college success by the attainment of employment, and **2** Business majors are over 10% more likely to have jobs that require college degrees after college than are Humanities majors. As a result, **3** there have been a sharp rise in more practical majors, like SCM, or supply-chain management.



The term “supply chain management” was coined by Keith Oliver in a 1982 interview. **4** However it happened, when the term began to take hold, the practice of supply-chain management came to be more and more clearly defined. [B] The most general definition holds that SCM is the strategic, systematic coordination of how a business works. For **5** instants, when you buy a new car, your purchase comes at the end of a complex supply chain—the last step of which is the factory sending **6** they're road-ready vehicle to the dealership.

2

Which of the following gives information consistent with the chart?

- A) NO CHANGE
- B) less than 50% of those with Area Studies majors are currently employed.
- C) the Health Professions provide the safest bet for those entering college now.
- D) the national average shows that only about 50% of all college grads are currently employed.

3

- A) NO CHANGE
- B) there've been
- C) there has been
- D) they're has been

4

Which of the following would best maintain the focus established in the first sentence of this paragraph?

- A) NO CHANGE
- B) By the mid-1990s,
- C) One afternoon,
- D) To get down to “business,”

5

- A) NO CHANGE
- B) instant's,
- C) instances,
- D) instance,

6

- A) NO CHANGE
- B) it's
- C) its
- D) their

CONTINUE

Before this step, however, hundreds or thousands of other, smaller processes have to take place first. [C] Each of these has to be imported from other suppliers, **7** which is one could say a process from mining to recycling of the vehicle or its decomposition in the process. After all, when you're done with your car, it doesn't just disappear. [D] You might sell it to someone else, back to a dealer, or to a junkyard for parts. **8** Make sure you get a good price!

7

- A) NO CHANGE
- B) a process that one could say goes all the way from the mining of natural resources to the eventual decomposition or recycling of the vehicle.
- C) from natural resources mining to the decomposition of vehicle recycling in the process one could say.
- D) in the life cycle of the car one could say it's both the natural resources and decomposition of the recycling.

8

Which of the following would most effectively conclude this paragraph?

- A) NO CHANGE
- B) Goodnight, sweet prince!
- C) It's all so interesting!
- D) The supply chain continues!

CONTINUE 

A supply-chain manager can't manage every single step of this process, but he or she can oversee the supply-chain for a specific company. A supply-chain manager, then, can provide a major financial benefit to the company for which he or she works. Efficient processes are generally cheaper **9** processes—and not just for manufacturing. SCM practices can also be applied to customer-service, especially to experiences that involve a number of employees. In **10** this way, like any college major, SCM is narrow enough to be an actual major but broad enough to be applicable to a number of industries and actual jobs.

Question 11 asks about the previous passage as a whole.

9

- A) NO CHANGE
- B) processes; and not
- C) processes. And not
- D) processes—and, not

10

- A) NO CHANGE
- B) this way, like any college major
- C) this way, like, any college major,
- D) this way like any college major

Think about the previous passage as a whole as you answer question 11.

11

Upon reviewing the essay and concluding that some information has been left out, the author composes the following sentence:

The automaker doesn't make the metals that go into the car, or the fluids that power its various functions, or the rubber on the tires.

The best placement for this sentence would be at point

- A) A in paragraph 1.
- B) B in paragraph 2.
- C) C in paragraph 3.
- D) D in paragraph 3.

CONTINUE 

Questions 12–22 are based on the following passage.

Millard Fillmore’s Presidency: Feel More Strongly About It?

Everyone knows who the first President of the United States was, but it takes a real expert to know that the thirteenth was Millard Fillmore. **12** As Zachary Taylor’s Vice President, Fillmore took over in 1850 after Taylor’s sudden death. Fillmore belonged to the Whig party. With Fillmore’s departure in 1853, the Whig party fell out of national politics, **13** but make no mistake, a lot of old guys were wearing wigs back then. If the American people have forgotten that there ever was a true third party, that is likely because **14** they simply faded away at a time when the national conversation was more concerned with the events that would lead up to the Civil War. Millard Fillmore, however, is more than just **15** a funny name that can make us chuckle—like all presidents, he had some influence on life as we live it today.

12

At this point in the essay, the writer is considering adding the following true statement:

Rutherford B. Hayes, born in 1822, was the nineteenth.

Should the writer make the addition here?

- A) Yes, because it provides another obscure fact that readers might like to know.
- B) Yes, because more readers have heard of Hayes than of Millard Fillmore.
- C) No, because it does not advance the main point that this paragraph is making.
- D) No, because Hayes’s presidency was far too controversial to deserve mention here.

13

Which of the following would best support the statement made in the first part of this sentence?

- A) NO CHANGE
- B) though the party’s life span in England followed a different trajectory.
- C) but Fillmore came back again in 1856 as the candidate for the Know-Nothing party.
- D) and every president has been a Democrat or a Republican ever since.

14

- A) NO CHANGE
- B) they all
- C) we
- D) the Whig party

15

- A) NO CHANGE
- B) a funny name that can wash away all our tears—
- C) a guffaw-inducing handle, or sobriquet,
- D) a funny name—

CONTINUE 

Fillmore's influence has been especially strong in international affairs. Relations between Japan and the United States began to open up around this time, after Japan's long history of **16** isolating. **17** After the British opened relations with China, Fillmore and his cabinet took inspiration in trying to open relations with Japan. This was an early step in the productive (and often fraught) relationship between the two nations.

16

- A) NO CHANGE
- B) isolationism.
- C) isolation of itself.
- D) isolationism of the nation.

17

Which of the following would best explain the use of the word *inspiration* in the later part of this sentence?

- A) NO CHANGE
- B) While there were plenty of other things to do at the White House,
- C) In the land that would eventually produce Toyota and Nintendo,
- D) Totally unrelated to the conflicts the nations would have in World War II,

CONTINUE 

The best-known, and perhaps most-reviled, of Fillmore’s “accomplishments” is his passing of the Fugitive Slave Act in 1851. This Act made slavery a national, **18** the whole United States, problem, as it forbade those in non-slave states from protecting escaped slaves. An escaped slave, because he was considered “property,” was committing an act of theft by escaping, and the person who harbored that escapee **19** will be then considered an accessory to that crime. The Fugitive Slave Act is a major scar on American **20** history, nevertheless, it is at least partly responsible for spurring the Civil War. The Fugitive Slave Act held back civil rights **21** forever because it demonstrated that the American government was not the progressive force, especially for African-Americans, that its constitution promised it would be.

Millard Fillmore was at the center of many of these things. While it may not be time to list him among our greatest presidents (in fact, he is routinely listed among the worst), Fillmore certainly provides the essential reminder that history is complex and the **22** presidency, even in its worst form, is a uniquely influential position in the history of the contemporary world.

18

Which of the following would best maintain the focus of this sentence by contributing to the main idea of the paragraph?

- A) NO CHANGE
- B) like as it related to everyone,
- C) rather than merely a southern,
- D) and at times international,

19

- A) NO CHANGE
- B) was
- C) is
- D) could of been

20

- A) NO CHANGE
- B) history, therefore,
- C) history, and
- D) history, but

21

- A) NO CHANGE
- B) for many years
- C) for an eternity
- D) for too darn long

22

- A) NO CHANGE
- B) presidency. Even in its worst form is a uniquely influential position in the history of the contemporary world.
- C) presidency: even in its worst form, is a uniquely influential position in the history of the contemporary world.
- D) presidency, even in its worst form, is a, uniquely, influential position, in the history of the contemporary world.



Questions 23–33 are based on the following passage.

The *Noir* Side of Classic American Literature

[1] Film director Robert Siodmak once said, “Hollywood has given the world two kinds of motion pictures which are typically American. [2] They are the western and the gangster film.” [3] In **23** that way, Dashiell Hammett and Raymond Chandler are considered the gold standard for great hardboiled fiction by authors from many nations. [4] The same might be said for American literary contributions. [5] With such fantastic authors working in the genre of detective **24** fiction, we can begin to see how these mystery novels come to be so much more than mere entertainment. [6] As Siodmak’s quote implies, there is more than meets the eye to certain works in the “entertainment” genres. **25**

23

- A) NO CHANGE
- B) those,
- C) genres,
- D) the “gangster” genre,

24

- A) NO CHANGE
- B) fiction. We can
- C) fiction we can
- D) fiction: we can

25

The best placement for sentence 4 would be

- A) where it is now.
- B) after sentence 2.
- C) after sentence 5.
- D) after sentence 6.

CONTINUE 

26 No one can match the intricacy and cleverness of Raymond Chandler’s great novels. Macdonald was born Kenneth Millar in Canada in 1915, and he spent most of his formative years there. In his 20s, Millar attended the University of **27** Michigan, when he earned a Ph.D. in English literature, writing a dissertation on the works of Romantic poet Samuel Taylor Coleridge. Millar finished the degree in 1946, but in 1944, he published his first novel, *The Dark Tunnel*. While it may seem that Millar was being pulled in two different directions— **28** toward the “high” Coleridge and the “low” detective novel—Millar’s later work under the pseudonym Ross Macdonald shows that he never took the separation very seriously.

26

Which of the following would most effectively introduce this paragraph by linking it to the previous paragraph?

- A) NO CHANGE
- B) Robert Siodmak had finished most of his career before Ross MacDonald became famous.
- C) One proponent of this high-end of crime fiction is Ross Macdonald.
- D) This is not to say, however, that there isn’t a lot of garbage out there too.

27

- A) NO CHANGE
- B) Michigan, which
- C) Michigan, where
- D) Michigan which

28

Which of the following choices would best maintain the focus of this sentence?

- A) NO CHANGE
- B) Samuel Taylor Coleridge was most famous for his poem “The Rime of the Ancient Mariner”
- C) toward movies and toward books, which both placed demands on his time
- D) as to whether he liked Raymond Chandler or Dashiell Hammett better

CONTINUE 

It is, after all, Macdonald's **29** superciliousness that puts his work in a category separate from that of his "pulp" contemporaries. While studying literature, Millar engaged closely not only with words but also with ideas, and the emergent discourses of psychoanalysis and Marxist economics did a good deal to inform how his characters operated. After all, **30** Macdonalds texts remind us that even the foulest murders are committed by **31** people who have a very human motivation. Macdonald was able to get inside the heads of his characters and to humanize some of the most horrendous and inhumane activities. No one is ever forgiven or rewarded for doing bad in a Macdonald novel, but neither is anyone ever portrayed as a purely evil monster.

Although murders, **32** thefts, and kidnappings may propel the plots of his books as they would in less self-conscious works, Macdonald treats them with a literary touch and uses the mystery form to show the depths of life's very mysteriousness. Following **33** to the detective novel in the footsteps of Hammett and Chandler, Macdonald brings something that literary fiction has known all along: human beings are the greatest mystery of all.

29

- A) NO CHANGE
- B) smartness
- C) know-how
- D) sophistication

30

- A) NO CHANGE
- B) Macdonald's
- C) Macdonalds's
- D) Macdonalds'

31

- A) NO CHANGE
- B) those who have a very human motivation.
- C) someone who has a very human motivation.
- D) people who have very human motivations.

32

- A) NO CHANGE
- B) thefts and kidnappings
- C) thefts and, kidnappings
- D) thefts, and kidnappings,

33

The best placement for the underlined portion would be

- A) where it is now.
- B) after the word *Chandler* (and before the comma).
- C) after the word *brings*.
- D) after the word *are*.



Questions 34–44 are based on the following passage and supplementary material.

Space: The Next Dimension (of Natural Resources)

At a time when the scientific community the world over **34** do all they can to warn the public about the effects of global warming, the idea of “resources” can get **35** lost in the big message. The contemporary dialogue is much more concerned with use and effectiveness than with **36** resourcefulness. We should not forget, however, the age-old concern that resources will, at some point, simply run out. There have been many alternatives presented: solar, wind, and hydrogen power are the day’s particularly hot topics. It has become clear, though, that these new resources will not cure us fully of energy dependency, especially with as large as that dependency is on fossil fuels. **37**

34

- A) NO CHANGE
- B) does all it can
- C) do all it can
- D) does all they can

35

- A) NO CHANGE
- B) lost in the mix.
- C) lost amid the noise.
- D) lost.

36

- A) NO CHANGE
- B) themselves.
- C) the resources themselves.
- D) them.

37

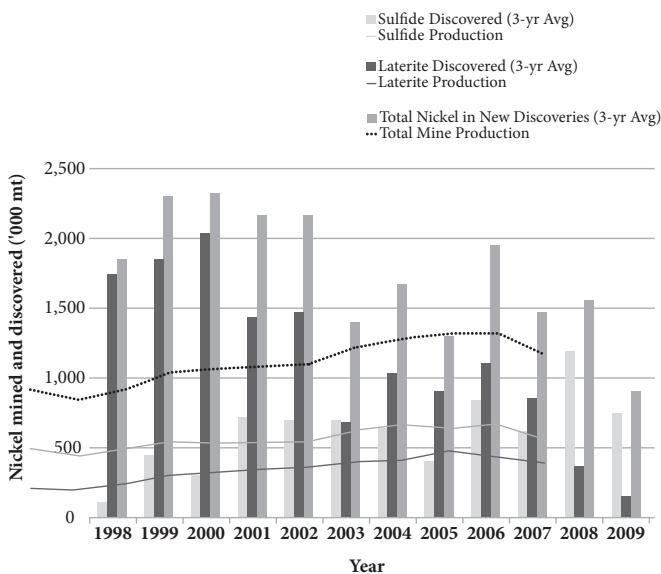
Which of the following, if added here, would provide the most effective conclusion to this paragraph and the most effective transition to the next?

- A) The solution to Earth’s problems may finally have come, however, from a seemingly unlikely source: space.
- B) World leaders are finally starting to take seriously the idea that there is a climate-change problem.
- C) Some believe that climate change is either not happening or not caused by human activity.
- D) Space, the final frontier, has captured the hearts and minds of Americans since the early twentieth century.

CONTINUE 

The new, and currently hypothetical, solution to the problem is called “asteroid mining.” As **38** wonderful as it may sound, asteroid mining is exactly what it sounds like. It refers to mining asteroids and other near-Earth objects for their raw materials, as these materials dwindle on Earth. Mining data show that **39** discoveries of new nickel sources in 2009 were less than half of what they were only ten years before. Scientists believe that the asteroids could contain a variety of minerals—including iron, nickel, and titanium. The practice may also enable astronauts to gather supplies for space journeys without overstocking or **40** getting new supplies on Earth. This practice, called “in-situ resource utilization,” could change both space travel and exploration to be much safer and much more predictable **41** than currently.

Potential Production from New Discoveries Relative to World Nickel Production, 1998-2009



Note: Potential production in new discoveries is calculated using a 75% resources-to-reserves conversion rate and subtracting 10% for sulfide processing losses and 25% for laterite processing losses; a running three-year average of the annual totals is shown.

Data source: MEG's Strategies for Nickel Reserves Replacement study.

38

- A) NO CHANGE
- B) outlandish
- C) wacky
- D) idiosyncratic

39

Which of the following choices gives information consistent with the graph?

- A) NO CHANGE
- B) sulfide production, from 1998 to 2009, was consistently lower than laterite production.
- C) for the first time in history, total nickel production in 2009 was lower than the three-year average of total nickel in new discoveries.
- D) the total nickel found in new discoveries has decreased steadily since 1998.

40

- A) NO CHANGE
- B) getting supplies a second time
- C) resupplying
- D) having resupplied

41

- A) NO CHANGE
- B) than now.
- C) than in the present.
- D) than they currently are.

CONTINUE

Scientists are confident in the potential results of asteroid mining precisely because they do not consider it all that distinct from Earth-bound mining. In fact, many resources exist in their relative abundance on Earth because of the rain of asteroids that hit the Earth after its surface **42** cooled, although the Earth and many of the asteroids were formed from similar proto-planetary material, Earth was much larger and pulled the many smaller asteroids into **43** its orbit and eventually onto its surface billions of years ago. Therefore, despite the obvious difficulty of capturing an in-flight asteroid, scientists are fairly certain of what they will find on these asteroids if and when they do.

Still, many are concerned that the infinitude of space may be a stopgap solution. First and foremost, the cost of extracting minerals from asteroids and then returning those minerals to Earth far outstrips the value of the minerals themselves. **44** Then, obviously, if we have depleted the vast (and once seemingly infinite) resources of Earth, there is no reason to believe that we will not deplete those of space as well. As a result, asteroid mining may have to remain “a” solution rather than “the” solution to our current energy woes.

42

- A) NO CHANGE
- B) cooled; although
- C) cooled, although,
- D) cooled although

43

- A) NO CHANGE
- B) their
- C) it's
- D) one's

44

At this point, the author wants to add a detail that will support the claim made in the previous sentence. Which of the following would most effectively achieve that goal?

- A) NASA already uses a large amount of public funds, so the venture would have to be privately funded.
- B) Astronauts are highly skilled individuals, often respected scientists, so it's tough to imagine an entire industry of adequately skilled people.
- C) The exorbitant cost of each of these expeditions would have to bring back an unreasonable amount of mined ore to be profitable.
- D) Sometimes it makes you wonder if we should just give up on the whole thing.

STOP

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

No Test Material On This Page



Math Test – No Calculator

25 MINUTES, 17 QUESTIONS

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

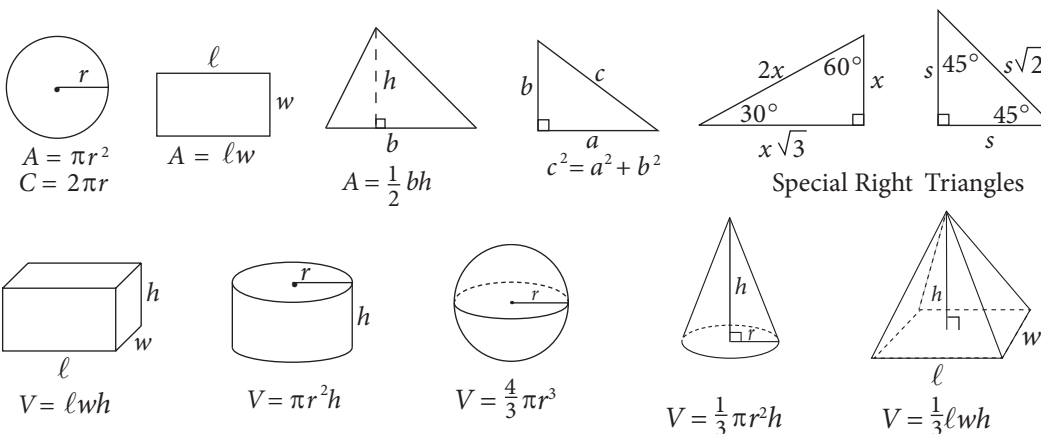
DIRECTIONS

For questions 1–13, solve each problem, choose the best answer from the choices provided, and fill in the corresponding circle on your answer sheet. For questions 14–17, solve the problem and enter your answer in the grid on the answer sheet. Please refer to the directions before question 14 on how to enter your answers in the grid. You may use any available space in your test booklet for scratch work.

NOTES

1. The use of a calculator **is not permitted**.
2. All variables and expressions used represent real numbers unless otherwise indicated.
3. Figures provided in this test are drawn to scale unless otherwise indicated.
4. All figures lie in a plane unless otherwise indicated.
5. Unless otherwise indicated, the domain of a given function f is the set of all real numbers x for which $f(x)$ is a real number.

REFERENCE



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

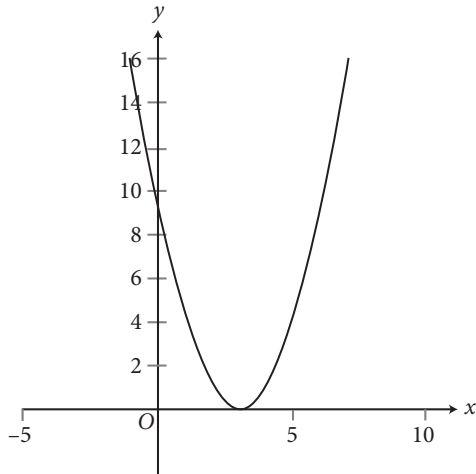
The number of radians of arc in a circle is 2π .

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

CONTINUE



1



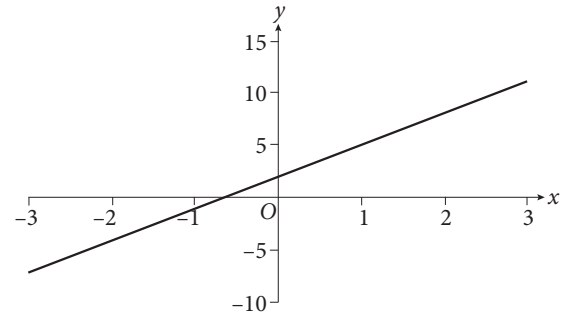
Which of the following functions is represented in the graph above?

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

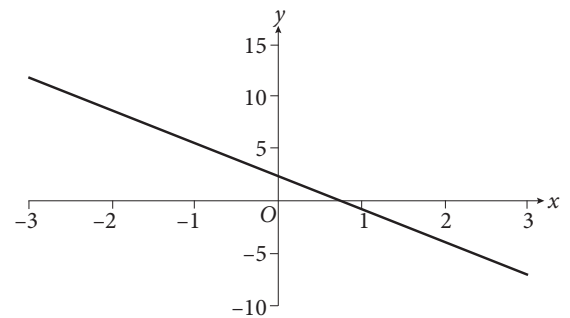
2

If $b < 0$, which of the following could be the graph of $y = 3x + b$?

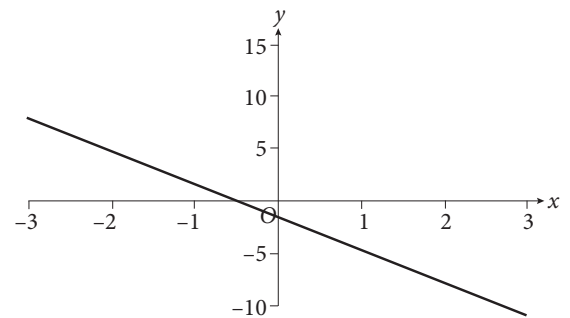
A)



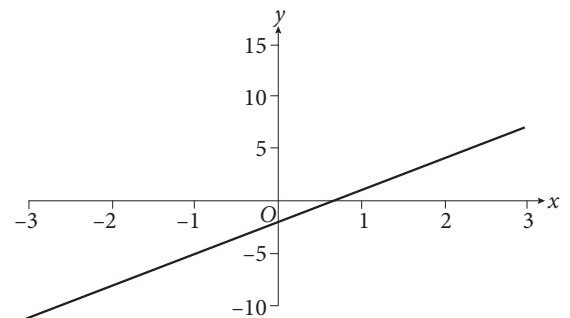
B)



C)



D)



CONTINUE



3

If $\frac{x^2 - 4x + 3}{3} = 2(x - 1)$, what is one possible value of x ?

- A) 3
- B) 5
- C) 6
- D) 9

4

From January of 1993 to January of 1999, the median income of U.S. households rose from 49,000 to 57,000. If this trend had continued linearly, which of the following equations could have been used to predict the median income, in thousands, in the United States x years after January 1999?

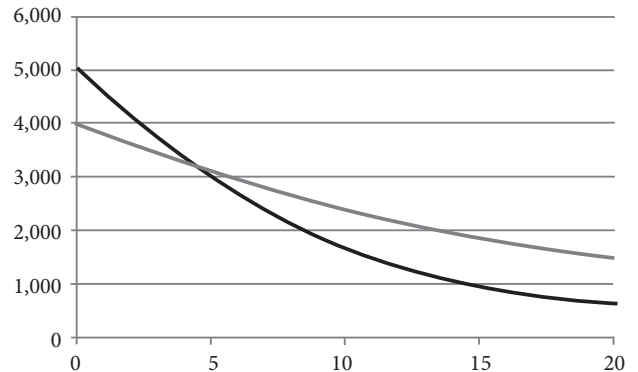
- A) $I = 49 + 8x$
- B) $I = 57 + 8x$
- C) $I = 57 + \frac{4}{3}x$
- D) $I = 49 + \frac{4}{3}x$

5

If $\frac{3(z + 3)}{4} - \frac{2(z - 2)}{3} = 2$, what is the value of z ?

- A) -19
- B) 13
- C) 19
- D) 41

6



Medical researchers measured the populations of bacteria in a petri dish after treatment with the new antibiotic as well as in a petri dish that was untreated. The graph above plots the populations of bacteria in both dishes. Which of the following expressions shows the difference in population between the treated petri dish and the control dish t hours after treatment?

- A) $5,000(0.95)^t - 4,000(0.9)^t$
- B) $4,000(0.95)t - 5,000(0.9)t$
- C) $5,000(0.9)^t - 4,000(0.95)^t$
- D) $5,000(1.1)^t - 4,000(1.05)^t$

CONTINUE



7

If $\frac{a^3}{\sqrt{ab}} = b$ and $ab > 0$, which of the following statements must be true?

- A) $a = b^3$
- B) $a^5 = b^3$
- C) $a^2 = b^2$
- D) $a^2 = b$

8

At the farmer's market, a bag of apples and 3 cartons of strawberries cost \$18 total. If a bag of apples costs 50% more than a carton of strawberries, how much does a bag of apples cost?

- A) \$4.00
- B) \$4.50
- C) \$5.13
- D) \$6.00

9

The number of visitors, V , a website receives doubles every 3 months. If 6 months ago the website received 24,500 visitors, how many visitors, in thousands, will it receive t years from now?

- A) $V = 24.5(2^{4t})$
- B) $V = 98(2^t)$
- C) $V = 98(2^{4t})$
- D) $V = 49\left(2^{\frac{t}{3}}\right)$

10

At a store the cost of a shirt and two pairs of equally priced socks is \$24, and the cost for three of the same shirt and two pairs of the same socks is \$32. What is the cost of the shirt and one pair of socks?

- A) 4
- B) 10
- C) 14
- D) 56

CONTINUE 



11

David is a criminology student and wants to determine the effect of several population parameters on the murder rate in a city. He collects data from hundreds of U.S. cities and determines that the number of murders can be approximated with a formula: $M = P \left(\frac{51 - I\sqrt{L}}{25} \right)$, in which P is the population in thousands, I is the median income, and L is the literacy rate expressed as a decimal. Which of the following expresses I in terms of M , P , and L ?

- A) $\frac{1}{\sqrt{L}} \left(51 - \frac{25M}{P} \right)$
 B) $\frac{1}{\sqrt{L}} \left(\frac{25M}{P} - 49 \right)$
 C) $\frac{M}{P} - \frac{51}{25} + \sqrt{L}$
 D) $\sqrt{L} \left(51 - \frac{25M}{P} \right)$

12

The radius of circle O (not shown) is 4, and the radian measure of central angle AOB is between $\frac{3\pi}{4}$ and $\frac{5\pi}{4}$. Which of the following could be the length of the arc AB ?

- A) 3π
 B) 4π
 C) 5π
 D) 8π

13

The value of John's baseball card collection decreases exponentially over time, and the value of his silver collection increases exponentially over time. If the value of John's two collections combined t years from now is given by the function $V = 500(1.05)^t + 600(0.95)^{\frac{t}{2}}$, which of the following statements must be true?

- A) John's silver collection is more valuable currently than his baseball collection.
 B) The value of John's silver collection changes at a faster rate than the value of John's baseball card collection.
 C) John's baseball card collection decreases in value by 10% every six months.
 D) The total value of the two collections remains constant over time.

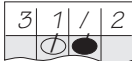


DIRECTIONS

For questions 14–17, solve the problem and enter your answer in the grid, as described below, on the answer sheet.

- Although not required, it is suggested that you write your answer in the boxes at the top of the columns to help you fill in the circles accurately. You will receive credit only if the circles are filled in correctly.
- Mark no more than one circle in any column.
- No question has a negative answer.
- Some problems may have more than one correct answer. In such cases, grid only one answer.

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

as 3.5 or 7/2. (If  is entered into

the grid, it will be interpreted as $\frac{31}{2}$, not as

$3\frac{1}{2}$.)

6. **Decimal Answers:** If you obtain a decimal answer with more digits than the grid can accommodate, it may be either rounded or truncated, but it must fill the entire grid.

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

7	/	1	2
.	.	.	.
0	0	0	0
1	1	1	1
2	2	2	2
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7	7	7	7
8	8	8	8
9	9	9	9

Write answer in boxes. → ← Fraction line

Grid in result. →

Answer: 2.5

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

← Decimal point

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

2	/	3
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0	0	0
1	1	1
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3	3	3	3
4	4	4	4
5	5	5	5
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8	8	8	8
9	9	9	9

Answer: 201 – either position is correct

2	0	1
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1	1	1
2	2	2
3	3	3
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9	9	9

2	0	1	
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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: You may start your answers in any column, space permitting. Columns you don't need to use should be left blank.



14

If $f(x) = 3x$ and $g(x) = x - 3$, what is the value of $f(4) - g(2)$?

15

There are 8 more males in Sara's class than females. If $\frac{3}{5}$ of the students are male, how many students are in Sara's class?

16

For positive integers c and d , the value of c is at least 3 times the value of d . If the difference between c and d is no more than 8, what is the largest possible value of d ?

17

The distance an object in motion travels is given by the following equation: $Displacement = V_i t + 0.5at^2$, in which V_i , a , and t represent initial velocity, acceleration, and time, respectively. The final velocity of the object is calculated with the equation $V_f = V_i + at$. How long does an object travel, in seconds, if it has a displacement of 22 meters, an initial velocity of 15 meters per seconds, and a final velocity of 5 meters per second?

STOP

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

No Test Material On This Page



Math Test – Calculator

45 MINUTES, 31 QUESTIONS

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

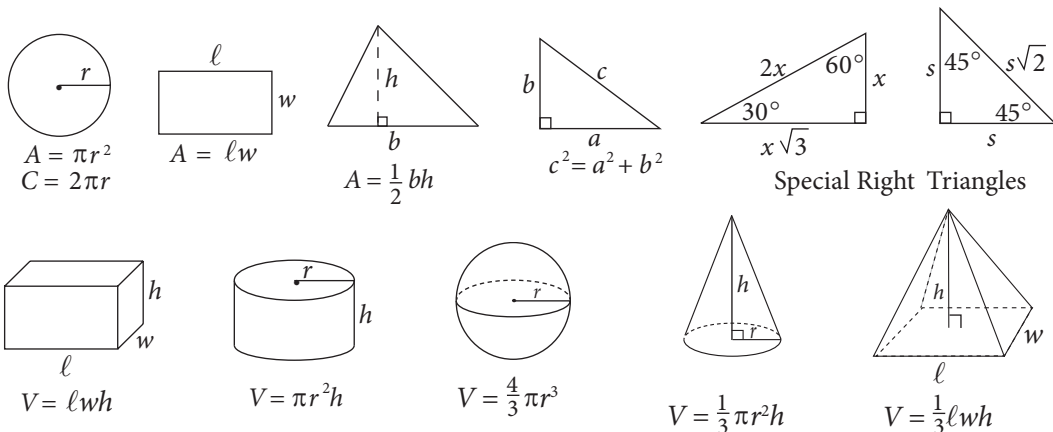
DIRECTIONS

For questions 1–27, solve each problem, choose the best answer from the choices provided, and fill in the corresponding circle on your answer sheet. For questions 28–31, solve the problem and enter your answer in the grid on the answer sheet. Please refer to the directions before question 28 on how to enter your answers in the grid. You may use any available space in your test booklet for scratch work.

NOTES

1. The use of a calculator is **permitted**.
2. All variables and expressions used represent real numbers unless otherwise indicated.
3. Figures provided in this test are drawn to scale unless otherwise indicated.
4. All figures lie in a plane unless otherwise indicated.
5. Unless otherwise indicated, the domain of a given function f is the set of all real numbers x for which $f(x)$ is a real number.

REFERENCE



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

The number of radians of arc in a circle is 2π .

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

CONTINUE



1

A proton fired through medium B travels at half the velocity of a proton fired through medium A . If the proton in medium A travels 100,000 meters in 5 milliseconds, what is the velocity of the proton in medium B ?

- A) 10,000 meters per millisecond
- B) 20,000 meters per millisecond
- C) 40,000 meters per millisecond
- D) 50,000 meters per millisecond

2

Which of the following values is a solution of $6x - 5 > 2 + 15x$?

- A) $-\frac{8}{9}$
- B) $-\frac{5}{9}$
- C) $-\frac{2}{7}$
- D) 0

3

Which of the following values of r is a solution for the equation $r + 22 = 3r - 26 + r^2$?

- A) -8
- B) -6
- C) 4
- D) 8

4

To be eligible for Spartanville's Super Service Award, a resident must complete at least 2,000 hours of community service through a designated program. There are two designated programs this year: volunteering at the Community Center for 7.5 hours per day and removing street litter for 4 hours per day. Which of the following inequalities represents the possible number of days spent volunteering at the Community Center c and days removing street litter l needed to be eligible for this year's Spartanville Super Service Award?

- A) $\frac{7.5}{c} + \frac{4}{l} > 2,000$
- B) $\frac{7.5}{c} + \frac{4}{l} \geq 2,000$
- C) $7.5c + 4l > 2,000$
- D) $7.5c + 4l \geq 2,000$

CONTINUE



5

Lengths of Fish (inches)
6
9
9
36
39
x

The table above shows the lengths, in inches, of all the fish caught by a fisherman in one day. If the median length was 15, then what was the mean length?

- A) 15
- B) 16.5
- C) 19
- D) 20

6

A certain gold coin has a volume of 5 cubic centimeters. The density of gold is 19.3 grams per cubic centimeter. If 1 ounce is equal to 28.3 grams, what is the approximate mass of the coin in ounces? (Note: Density is mass divided by volume.)

- A) 3.41
- B) 7.33
- C) 32.16
- D) 2,730.95

7

Dr. Seeker, a noted paleontologist, polls colleagues around the world asking for their theory on what caused the mass extinction of most dinosaur species and brought about the end of the Cretaceous Period. After polling 200,000 of his colleagues, 151,394 of them reply that they believe the mass extinction to be caused by the Chicxulub Asteroid impact. The remaining 48,606 reply with alternative theories. From this data, which is the best conclusion that Dr. Seeker could make?

- A) Approximately 10% of all scientists polled believe the mass extinction to be caused by the Chicxulub Asteroid impact.
- B) Approximately 25% of all scientists polled believe the mass extinction to be caused by the Chicxulub Asteroid impact.
- C) Approximately 50% of all scientists polled believe the mass extinction to be caused by the Chicxulub Asteroid impact.
- D) Approximately 75% of all scientists polled believe the mass extinction to be caused by the Chicxulub Asteroid impact.

8

A computer chip factory currently has 50 employees and has an output of 385 computer chips per day. A manager determined that for each additional employee hired, the output of the factory would increase by 42 computer chips. Which of the following functions, $C(x)$, expresses the total output of the factory for x employees when $x \geq 50$?

- A) $C(x) = 42^{(x-50)} + 385$
- B) $C(x) = (x)^{42} + 385$
- C) $C(x) = 42x + 385$
- D) $C(x) = 385 + 42(x - 50)$

CONTINUE



9

$$\frac{3(t + 2)}{4} = \frac{100 - 5t + 44}{8}$$

In the equation above, what is the value of t ?

- A) -69
- B) 4
- C) 12
- D) 36

10

In the xy -plane, the graph of $y = (3x - 6)(x - 6)$ represents a parabola. If the x - and y -coordinates of the parabola's vertex are to be expressed as constants or coefficients, which of the following forms of the equation is appropriate?

- A) $y = (3x - 6)(x - 6)$
- B) $y = 3(x - 4)^2 + (-12)$
- C) $y = 3(x^2 - 8x + 12)$
- D) $y = 3x^2 - 24x + 36$

11

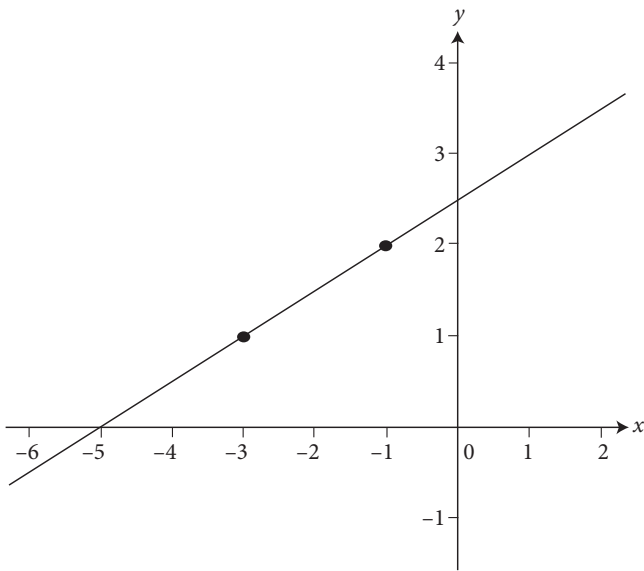
Taylor is preparing to write his next novel, which will be 700 pages long. While typing, Taylor types at a constant rate of 23 words per minute. If each page contains 800 words, which of the following functions p models the number of pages Taylor has left to type after typing for m minutes?

- A) $p(m) = \frac{700 - 800m}{23}$
- B) $p(m) = \frac{700 - 23m}{800}$
- C) $p(m) = 700 - \frac{23m}{800}$
- D) $p(m) = 700 - \frac{800}{23m}$

CONTINUE



12



Line b is shown above. Line c is parallel to line b and contains the point $(3, -2)$. Which of the following could be the equation of line c ?

- A) $y = 2x - 8$
- B) $y = \frac{1}{2}x - \frac{7}{2}$
- C) $y = \frac{1}{2}x - \frac{1}{2}$
- D) $y = -\frac{1}{2}x - \frac{7}{2}$

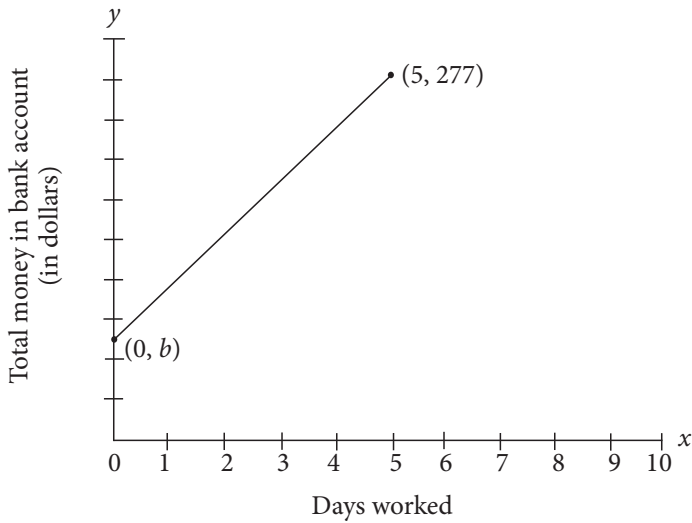
13

In State Q, the number of people in poverty halved each year from 2008 to 2012. There were 50,000 people in poverty in State Q in 2008, and m represents the number of months since January 2008, where $0 \leq m \leq 48$. Which of the following functions $f(m)$ could be used to estimate the number of people in poverty in State Q m months after January 2008?

- A) $f(m) = 50,000 - \left(\frac{1}{2}\right)m$
- B) $f(m) = 50,000 - \left(\frac{1}{2}\right)\left(\frac{m}{12}\right)$
- C) $f(m) = 50,000 \times \left(\frac{\frac{m}{12}}{2}\right)$
- D) $f(m) = 50,000 - m^{\frac{1}{2}}$



14



In the graph above, x represents the number of days Chris has worked his part-time job and y represents the total amount of money in his bank account. If the graph has a slope of 40, what is the value of b , assuming Chris deposits all his earnings and does not spend any of the money in his bank account?

- A) 117
- B) 77
- C) 40
- D) 37

15

If $y = x^2 + x - 20$ and $z = x^2 + 10x + 25$, what is $\frac{y^2}{z}$, in terms of x ?

- A) $\frac{x^4 - 8}{10x}$
- B) $\frac{x^4 + x^2 - 400}{x^2 + 10x + 25}$
- C) $x^2 - 8x - 15$
- D) $x^2 - 8x + 16$



16

The Squared Up framing store charges \$61 to frame a customer's picture. The owner of the store calculated that the cost to frame each picture is \$38 in materials plus \$5 in the labor cost. The store must also pay \$720 each month in general operating costs. Squared Up is profitable when the income from framing customers' picture exceeds the total cost of framing the picture plus the general operating cost. If p is the number of pictures framed in a month, which of the following gives all possible values of p for which Squared Up is profitable during that month?

- A) $p > 40$
- B) $p < 40$
- C) $p > 12$
- D) $p < 12$

Questions 17–18 refer to the following information.

A nonprofit group wanted to determine whether there is an association between a household's income and the amount of money spent on groceries. After surveying 800 randomly selected households in Florida, the nonprofit found that as the household's income increased, its spending on groceries decreased.

17

If the nonprofit wanted to determine whether an association exists between a household's income and the average amount of money spent on groceries per person, which of the following changes to the survey would be most appropriate?

- A) Determine the number of people per household who earn income.
- B) Determine the total number of people per household.
- C) Increase the number of households surveyed in Florida.
- D) Survey households in additional states.

18

Which of the following conclusions is supported by the data?

- A) As a household's income increases, the more it spends at restaurants.
- B) A household's income is inversely proportional to the amount of money spent on groceries in Florida.
- C) Having a lower household income causes the household to spend more on groceries.
- D) There is a positive correlation between a household's income and the amount of money spent on groceries in the United States.

CONTINUE



19

$$\begin{aligned}2x - 96 &= 4y - x \\3y + 10x &= y + 90\end{aligned}$$

Based on the system of equations above, what is the value of $\frac{x}{y}$?

- A) $-\frac{4}{5}$
- B) $-\frac{3}{4}$
- C) $-\frac{1}{5}$
- D) $\frac{4}{3}$

20

Larissa uploaded 40,000 songs from her computer to her web storage. The mean file size of a song is 0.022 gigabytes, and the total time to upload all the files was 7.5 hours. If 1 gigabyte is equal to 1,024 megabytes, what is the upload rate for the files in megabytes per second, rounded to the nearest hundredth?

- A) 1.48
- B) 3.00
- C) 33.37
- D) 250.28

21

As part of her research into the social behaviors of felines, Dr. Ivask begins to observe the cheetah population near a noted watering hole in Namibia at the start of the year 2012. After years of observing the cheetahs, she constructs the equation $c(y) = 17y + 112$, in which y represents the number of years since the start of 2012 and c represents the cheetah population at the start of that given year. Dr. Ivask notes that after the start of 2015, an additional 20 cheetahs from a different region of Namibia join her cheetah population. Which of the following would be the number of cheetahs in the population that Dr. Ivask is observing after the additional 20 cheetahs joined?

- A) 132
- B) 163
- C) 166
- D) 183

CONTINUE 



22

Number of Cars	Bronx	Brooklyn	Manhattan	Queens	Staten Island
Zero	960	1,120	1,280	720	80
One	640	560	480	600	40
Two	320	160	320	240	100
Three	0	160	80	80	60

The New York City Department of Motor Vehicles compiled the data for the number of cars owned in each of the city's five boroughs. There are 8 million residents in all five boroughs. The table above shows the number of residents, in thousands, from each of the five boroughs who own the specified number of cars. What percent of the New York City residents own more than the median number of cars per person and live in Manhattan?

- A) 5%
- B) 11%
- C) 27%
- D) 48%

23

If $8s = 4t + 17$ and $6t - 5s = 4$, what is the value of $6s + 4t$?

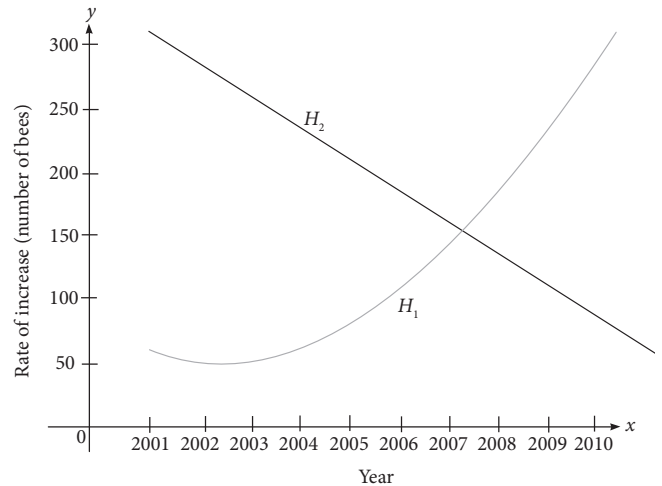
- A) 13
- B) 15
- C) 21
- D) 42

24

Circle C is defined by the equation $x^2 + y^2 - 8x + ky = 172$, and parabola P is defined by the equation $y = x^2 - 8x + 22$. For which value of k will circle C be centered at the vertex of parabola P ?

- A) -12
- B) -4
- C) 6
- D) 8

25



An entomologist analyzed the populations of two bee colonies, H_1 and H_2 . She documented the rate of increase, which is the number of bees added to a colony in that year, for each colony over a 10-year period starting in the year 2000. The findings are modeled in the graph above. Which of the following conclusions can be drawn based on the entomologist's findings?

- A) The population of H_2 decreased at a constant rate for each of the 10 years.
- B) In 2008, the populations of H_1 and H_2 were equal.
- C) In 2005, the population of H_2 was increasing at a faster rate than was the population of H_1 .
- D) The population of H_1 doubled from 2001 to 2005.

CONTINUE

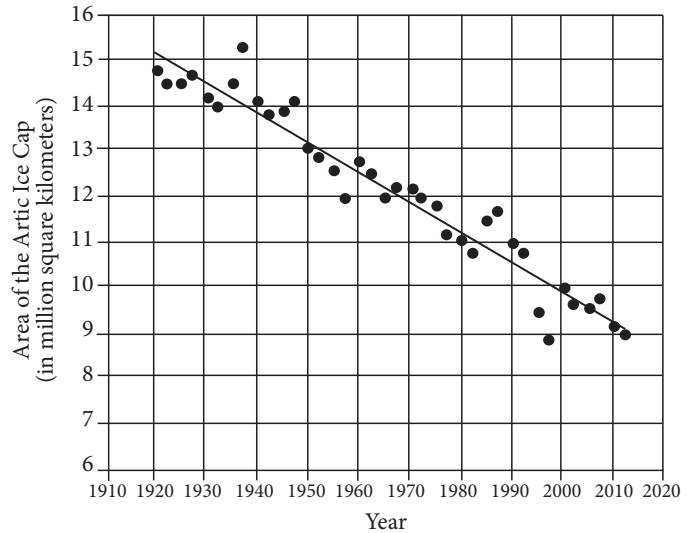


26

In 2007, a biologist introduced a colony of phytoplankton into Great Blue Fish Lake, which had never contained phytoplankton before. The number of phytoplankton y in Great Blue Fish Lake can be estimated using the equation $y = \left(6.23^{\frac{k}{12}}\right)$, where k represents the number of months since the population was introduced. Which of the following is a proper interpretation of the elements of the equation?

- A) 8,564,600 represents the number of phytoplankton after 1 year.
- B) 8,564,600 represents the number of phytoplankton prior to 2007.
- C) 6.23 represents the rate of increase on phytoplankton each month.
- D) 6.23 represents the rate of increase on phytoplankton each year.

27



The scatterplot above shows the size of the Arctic Ice Cap as observed from 1920 to 2015. Which of the following is the closest approximation of the average annual decrease in the area of the Arctic Ice Cap as indicated by the line of best fit?

- A) 1 square kilometers
- B) 6.6 square kilometers
- C) 100,000 square kilometers
- D) 66,000 square kilometers

CONTINUE


DIRECTIONS

For questions 28–31, solve the problem and enter your answer in the grid, as described below, on the answer sheet.

- Although not required, it is suggested that you write your answer in the boxes at the top of the columns to help you fill in the circles accurately. You will receive credit only if the circles are filled in correctly.
- Mark no more than one circle in any column.
- No question has a negative answer.
- Some problems may have more than one correct answer. In such cases, grid only one answer.

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

as 3.5 or 7/2. (If

3	1	/	2
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 is entered into the grid, it will be interpreted as $\frac{31}{2}$, not as

$3\frac{1}{2}$.)

- Decimal Answers:** If you obtain a decimal answer with more digits than the grid can accommodate, it may be either rounded or truncated, but it must fill the entire grid.

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

Write answer in boxes. →

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

← Fraction line

Grid in result. →

Answer: 2.5

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

← Decimal point

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

2	/	3
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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4	4	4	4
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6	6	6	6
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8	8	8	8
9	9	9	9

Answer: 201 – either position is correct

2	0	1
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9	9	9

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<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

NOTE: You may start your answers in any column, space permitting. Columns you don't need to use should be left blank.

CONTINUE



28

$$(x - 2)^2 + (y + 8)^2 = 144$$

The equation of a circle in the xy -plane is shown above. What is the length of the diameter of the circle?

29

$$p(x) = \frac{(x + 4)(x - 4)(\sqrt{-x})}{x + 4}$$

For how many values of x does $p(x) = 0$?

Questions 30–31 refer to the following information.

A new car dealership offers a choice of two different compensation packages to its salespeople. With Package A, a salesperson is paid an annual salary of \$10,000 plus a commission as a percentage of the sale price of each car sold that year. With Package B, a salesperson is not paid any salary but earns a fixed fee for each car sold that year. A salesperson must choose one of the packages at the time of hire and has the option to switch packages only on January 1 of each year.

30

On January 1, 2003, Jason chose compensation Package A. Jason sold 110 cars with a mean sales price of \$30,000 that year. If Jason had chosen compensation Package B, his total compensation for the year would have been \$1,550 more. If the commission percentage of Package A was 1%, what was the fixed fee per car, in dollars, for compensation Package B in 2003?

31

In 2005, the commission percentage of Package A was 1.5%, and the fixed fee per car of Package B was \$725. Jason sold 80 cars that year and determined that his total compensation would be the same under both Package A and Package B. What is the mean price, in thousands of dollars, of the cars that Jason sold in 2005?

STOP

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

1. YOUR NAME: _____
(Print) Last First M.I.

SIGNATURE: _____ DATE: ____/____/____

HOME ADDRESS: _____
(Print) Number and Street

City State Zip Code

PHONE NO.: _____
(Print)

5. YOUR NAME

First 4 letters of last name				FIRST INIT	MID INIT
(A)	(A)	(A)	(A)	(A)	(A)
(B)	(B)	(B)	(B)	(B)	(B)
(C)	(C)	(C)	(C)	(C)	(C)
(D)	(D)	(D)	(D)	(D)	(D)
(E)	(E)	(E)	(E)	(E)	(E)
(F)	(F)	(F)	(F)	(F)	(F)
(G)	(G)	(G)	(G)	(G)	(G)
(H)	(H)	(H)	(H)	(H)	(H)
(I)	(I)	(I)	(I)	(I)	(I)
(J)	(J)	(J)	(J)	(J)	(J)
(K)	(K)	(K)	(K)	(K)	(K)
(L)	(L)	(L)	(L)	(L)	(L)
(M)	(M)	(M)	(M)	(M)	(M)
(N)	(N)	(N)	(N)	(N)	(N)
(O)	(O)	(O)	(O)	(O)	(O)
(P)	(P)	(P)	(P)	(P)	(P)
(Q)	(Q)	(Q)	(Q)	(Q)	(Q)
(R)	(R)	(R)	(R)	(R)	(R)
(S)	(S)	(S)	(S)	(S)	(S)
(T)	(T)	(T)	(T)	(T)	(T)
(U)	(U)	(U)	(U)	(U)	(U)
(V)	(V)	(V)	(V)	(V)	(V)
(W)	(W)	(W)	(W)	(W)	(W)
(X)	(X)	(X)	(X)	(X)	(X)
(Y)	(Y)	(Y)	(Y)	(Y)	(Y)
(Z)	(Z)	(Z)	(Z)	(Z)	(Z)

IMPORTANT: Please fill in these boxes exactly as shown on the back cover of your test book.

2. TEST FORM

3. TEST CODE				4. REGISTRATION NUMBER						
(0)	(A)	(J)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
(1)	(B)	(K)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
(2)	(C)	(L)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
(3)	(D)	(M)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)
(4)	(E)	(N)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)
(5)	(F)	(O)	(5)	(5)	(5)	(5)	(5)	(5)	(5)	(5)
(6)	(G)	(P)	(6)	(6)	(6)	(6)	(6)	(6)	(6)	(6)
(7)	(H)	(Q)	(7)	(7)	(7)	(7)	(7)	(7)	(7)	(7)
(8)	(I)	(R)	(8)	(8)	(8)	(8)	(8)	(8)	(8)	(8)
(9)			(9)	(9)	(9)	(9)	(9)	(9)	(9)	(9)

6. DATE OF BIRTH

Month	Day	Year
() JAN		
() FEB	(0) (0)	(0) (0)
() MAR	(1) (1)	(1) (1)
() APR	(2) (2)	(2) (2)
() MAY	(3) (3)	(3) (3)
() JUN	(4) (4)	(4) (4)
() JUL	(5) (5)	(5) (5)
() AUG	(6) (6)	(6) (6)
() SEP	(7) (7)	(7) (7)
() OCT	(8) (8)	(8) (8)
() NOV	(9) (9)	(9) (9)
() DEC		

7. SEX

() MALE

() FEMALE



Test 1

Start with number 1 for each new section.
 If a section has fewer questions than answer spaces, leave the extra answer spaces blank.

Section 1—Reading

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

Section 2—Writing and Language Skills

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

Test 1

Start with number 1 for each new section.
If a section has fewer questions than answer spaces, leave the extra answer spaces blank.

Section 3—Mathematics: No Calculator

1. (A) (B) (C) (D)
2. (A) (B) (C) (D)
3. (A) (B) (C) (D)
4. (A) (B) (C) (D)
5. (A) (B) (C) (D)
6. (A) (B) (C) (D)
7. (A) (B) (C) (D)
8. (A) (B) (C) (D)
9. (A) (B) (C) (D)
10. (A) (B) (C) (D)
11. (A) (B) (C) (D)
12. (A) (B) (C) (D)
13. (A) (B) (C) (D)

14.

.	/	/	.
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

15.

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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

16.

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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

17.

.	/	/	.
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

Section 4—Mathematics: Calculator

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

28.

.	/	/	.
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

29.

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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

30.

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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

31.

.	/	/	.
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

PRACTICE TEST 1 ANSWER KEY

Section 1: Reading

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

Section 2: Writing and Language

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

Section 3: Math (No Calculator)

- | | |
|-------|---------|
| 1. A | 11. A |
| 2. D | 12. B |
| 3. D | 13. B |
| 4. C | 14. 13 |
| 5. A | 15. 40 |
| 6. C | 16. 4 |
| 7. B | 17. 2.2 |
| 8. D | |
| 9. C | |
| 10. C | |

Section 4: Math (Calculator)

- | | |
|-------|---------|
| 1. A | 16. A |
| 2. A | 17. B |
| 3. A | 18. B |
| 4. D | 19. A |
| 5. D | 20. C |
| 6. A | 21. D |
| 7. D | 22. B |
| 8. D | 23. D |
| 9. C | 24. A |
| 10. B | 25. C |
| 11. C | 26. D |
| 12. B | 27. D |
| 13. C | 28. 24 |
| 14. B | 29. 1 |
| 15. D | 30. 405 |
| | 31. 40 |