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**Test begins on the next page.**

# Reading Test

## 65 MINUTES, 52 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 1-10 are based on the following passage.

This passage is adapted from Jhumpa Lahiri, *The Namesake* ©2003 by Jhumpa Lahiri.

Later that night GogolGanguli is alone in his room, listening to side 3 of the White Album on his parents' cast-off RCA turntable. *Line* The album is a present from his American birthday party, given to him by one of his friendsatschool. Born when the band was near death, Gogol is a passionate devotee of John, Paul, George, and Ringo. In recent years he has collected nearly all their albums, and the Only thing tacked to the bulletin board on the back of his door is Lennon's obituary, already yellow and brittle, clipped from the Boston Globe. He sits cross-legged on the bed, hunched over the lyrics, when he hears a knock on the door.

15 "Come in," he hollers, expecting it to be his sister Sonia in her pajamas, asking if she can borrow his Magic 8 Ball or hisRubik's Cube. He is surprised to see his father, standing in stocking feet, a small potbelly visible beneath

20 his oat-colored sweater vest,his mustache turning gray. Gogol is especially surprised to see a gift in his father's hands. His father has never given him birthday presents apart from whatever his mother buys, but this year, his

25 father says, walking across the room to where

Gogol is sitting, he hassomething special. The gift is covered in red-and-green-and-gold-striped paper left over from Christmas the year before, taped awkwardly at the seams. It is obviously a

30 book, thick, hardcover, wrapped by his father's own hands. Gogol lifts the paper slowly, but in spite of this the tape leaves a scab. The Short Stories of Nikolai Gogol, the jacket says. Inside, the price has been snipped away on the

35 diagonal.

"I ordered it from the bookstore,just for you,"his father says, his voice raised in order to be heard over the music." It's difficult to find in hardcover these days, It's a British publication,

40 a very small press. It took four months to arrive. I hope you like it."

Gogol leans over toward the stereo to turn the volume down a bit. He would have preferred *The Hitchhiker's Guide to the Galaxy*,

45 or even another copy or *The Hobbit* to replace the one he lost last summer in Calcutta, left on the rooftop of his father's house in Alipore and snatched away by crows. In spite of his father's occasional suggestions, he has never

50 been inspired to read a word of Gogol, or any Russian writer, for that matter. He has never been told why he was really named Gogol, doesn't know about the accident that had nearly killed his father. He thinks his father's limp is

55 the consequent of an injury playing soccer in

his teens. He's been told only half the truth about Gogol: that his father is a fan.

"Thanks, Baba," Gogol says, eager to return to lyrics. Lately he's been lazy, addressing his parent English though they continue to speak to him in Bengali. Occasionally he wanders through the house with his running sneakers on. At dinner he sometimes uses a fork.

His father is still standing there in his room, watching expectantly, his hands clasped together behind his back, so Gogol flips through the book. A single picture at the front, on smoother paper than the rest of the pages, shows a pencil drawing of the author. That face is foxlike, with small, dark eyes, a thin, neat mustache, an extremely large pointy nose. Dark hair slants steeply across his forehead and is plastered to either side of his head, and there is a disturbing, vaguely supercilious smile set into long, narrow lips. Gogol Ganguli is relieved to see no resemblance. True, his nose is long but not so long, his hair dark but surely not so dark, his skin pale but certainly not so pale. The style of his skin pale but altogether different—thick Beatle-like bangs that conceal his brows. Gogol Ganguli wears a Harvard sweatshirt and gray Levi's corduroys. He has worn a tie once in his life, to attend a friend's bar mitzvah. No, he concludes confidently, there is no resemblance at all.

1

Based on the passage, which choice best describes Gogol's view of popular culture in the United States?

- A) He is largely unaware of it
- B) He sees it as being highly artistic.
- C) He wants to shield his parents from it
- D) He wants to fit into it

2

Based on the passage, which choice best describes the relationship between Gogol and his father?

- A) They rarely interact on an intimate level.
- B) They confide in each other.
- C) There is hostility between them.
- D) They are affectionate toward each other.

3

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

- A) Lines 18-24 ("He is...buys")
- B) Lines 31-35 ("Gogol...diagonal")
- C) Lines 39-40 ("It's a...arrive")
- D) Lines 58-59 ("Thanks...lyrics")

4

As used in line 29, "awkwardly" most nearly means

- A) uncomfortably.
- B) clumsily.
- C) troublesomely.
- D) inappropriately.

5

Which choice best supports the idea that Gogol's interests are different from his father's?

- A) Lines 8-12 ("In recent... Globe")
- B) Lines 31-35 ("Gogol...diagonal")
- C) Lines 43-51 ("He would ... matter")
- D) Lines 56-57 ("He's been... fan")

6

The passage most strongly suggests that the book is important to Gogol's father because

- A) it will help Gogol become more familiar with his father's hometown.
- B) it is connected to an important event from Gogol's father's past.
- C) he wants to reassure his son that the name "Gogol" is not rare.
- D) Gogol's grandfather was a scholar of Russian literature.

7

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

- A) Lines 8-9 ("In recent...albums")
- B) Lines 26-28 ("The gift...before")
- C) Lines 51-54 ("He has...father")
- D) Lines 54-56 ("He thinks...teens")

8

As used in line 59, "lazy" most nearly means

- A) negligent
- B) passive.
- C) lethargic.
- D) slow.

9

According to the passage, Gogol opens the book he received mainly because

- A) wants to see a picture of the author.
- B) is so thrilled that his father bought him a gift.
- C) has lost interest in the music lyrics he was studying.
- D) knows that it is what his father wants him to do.

10

In the passage, the sharpest contrast drawn between the individual pictured in the book and Gogol Ganguli is in terms of their

- A) signs of aging.
- B) facial hair and expression.
- C) clothing and hairstyle.
- D) facial features.

Questions 11-20 are based on the following passage and supplementary material.

The passage is adapted from Nicholas Wade, *Before the Dawn: Recovering the Lost History of Our Ancestors* by Nicholas Wade, 2006

Historical linguists are enthusiastic about a language-dating technique called linguistic paleontology. The idea is to reconstruct words for objects of material culture in a language family and date the language by noting the times at which such objects first appear in the archaeological record.

In many Indo-European languages, for example, there are words for wheel that are clear cognates of each other. Greek has *kuklos* (a word that is also the origin of circle). Sanskrit *cakras*, “Tokharian *kukal*, and Old English *hweowol* (initial “k”s in Proto-Indo-European turn to “h” sounds in the Germanic family branch). Since the daughter languages of Proto-Indo-European have cognate words for wheel, they must be derived from a common source, and linguists assert that this was the Proto-Indo-European word for wheel, which they reconstruct as *\*k<sup>w</sup>ek<sup>w</sup>los* (the asterisk indicates a reconstructed word).

Now, the earliest known wheels in the archaeological record date from 3400 BC (5,400 years ago). The Proto-Indo-European language must have split into its daughter languages sometime after this date, the argument goes, since how else could the daughter languages, spoken over an enormous region, all have cognate words for wheel?

Similar arguments can be made for words like yoke, axle, and wool. Work on this issue by linguists like Bill Darden of the University of Chicago has encouraged many linguists in their belief that Indo-European was a single language as recently as 5,500 years ago and that its daughter languages could not have come into existence until after this date.

Linguistic paleontology is an ingenious exercise of the linguist’s craft. But it has two conceptual weaknesses. One is that a splendid new invention like the wheel is likely to spread like wildfire from one culture to the next, carrying its own name with it. Linguistic paleontologists claim they can spot such borrowed words. It’s true that “Coca-Cola” is easy enough to recognize as a foreign borrowing in many languages, but the more ancient the borrowing, the more a word may take on the coloration of its host language. One of the criticisms linguists level at glottochronology [a rival language-dating method that does not employ archaeological research] is that it is confounded by unrecognized borrowed words.

Another weakness in linguistic paleontology is the danger of constructing highly plausible words that didn’t, in fact, exist. Related words for bishop exist in Creek, (*episkopos*). Latin (*episcopus*), Old English (*bisceop*), Spanish (*obispo*) and French (*evêque*), from which the Proto-Indo-European word *\*apispek* for bishop could be reconstructed; but of course, in a language spoken at least 5,000 years ago, no such word existed. As for wheel, Proto-Indo-European is thought to have had a word *\*k<sup>w</sup>el*, meaning to turn or twist; of which *\*k<sup>w</sup>ek<sup>w</sup>los* is assumed to be a duplication. But it could be that Proto-Indo-European had no word for wheel, and what happened was that its daughter languages each independently used their inherited *\*k<sup>w</sup>el* turn words to form their own words for wheel. In which case Proto-Indo-European could have been spoken thousands of years before the invention of the wheel.

Table1

Distribution of Proto-Indo-European “Wheel” Words  
in Select Indo-European Language Groups

Word	Believed meaning	In Germanic Languages?	In Baltic Language?	In Slavic Languages?	In Indic Languages?	In Celtic Languages?	In Greek Languages?
<i>*k<sup>w</sup>ek<sup>w</sup>los</i>	wheel	yes	no	no	yes	no	yes
<i>*roh-eh<sub>2</sub>-</i>	wheel	yes	yes	no	yes	yes	no
<i>*wegheti</i>	Convey in a vehicle	yes	no	yes	yes	yes	no
<i>*aks-</i>	axle	yes	yes	yes	yes	no	yes

Adapted from David W. Anthony. The Hone, the Wheel, and Language: How Bronze-Age Riders from the Eurasian Steppes Shaped the Modern World, ©2007 by Princeton University Press.

Table2

Similarities among Some Major European Languages  
of the Indo-European Language Family

Language pair	Number of translation equivalents examined	Written cognates (homographs) among translation equivalents	Sound cognates (homophones) among translation equivalents
Spanish and Italian	2,946	1,438	996
Dutch and English	4,192	1,104	1,223
Spanish and French	2,761	1,166	849
German and English	4,625	778	953
Spanish and English	5,057	1,057	869
French and German	2,345	452	448

Adapted from Job Schepens et al. “Gloss-Language Distributions of High-Frequency and Phonetically Similar Cognates.” ©2013 by Schepens et al.

Two words in different languages are translation equivalents if each is the nearest word in meaning to the other.



11

Which statement best describes the overall structure of the passage?

- A) It first recounts linguists' interpretation of archaeological data and then suggests that the data are unsound.
- B) It first provides an overview of some recent techniques used in linguistics studies and then details the failings of two of them.
- C) It first defines a theory of linguistics and then argues that it is applicable to only a few languages.
- D) It first summarizes a method advanced by some linguists and then identifies certain of its limitations.

12

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

- A) belief.
- B) approach.
- C) image.
- D) option.

13

Which statement best identifies the role in linguistic paleontology of physical evidence of past human life and activity?

- A) The evidence provides a standard of the technological prowess of a culture.
- B) The evidence helps researchers estimate when specific words emerged in ancient languages.
- C) The evidence supplies clues as to how words in indent languages were pronounced.
- D) The evidence allows linguists to distinguish among words of closely related meanings.

14

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

- A) Lines 3-7 ("The idea ... record")
- B) Lines 8-10 ("In many... other")
- C) Lines 10-14 ("Greek... branch")
- D) Lines 22-24 ("Now ... ago")

15

According to the passage, scholars who follow the linguistic paleontological technique generally believe that the daughter languages of Proto Indo-European arose

- A) no earlier than 5,400 years ago.
- B) before their speakers adopted the wheel.
- C) as Proto-Indo-European culture declined.
- D) over a period of a century or less.

16

The author implies that scholars who use linguistic paleontological methods may sometimes be unable to determine

- A) why some words evolved into cognates in daughter languages while others did not.
- B) how inventions were disseminated among cultures previously unfamiliar with them.
- C) whether words are true cognates or instead are imported from another language.
- D) when an object associated with a particular culture first appeared in the culture.



17

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

- A) Lines 43-44 (“Linguistic... words”)
- B) Lines 44-49 (“It’s true... language”)
- C) Lines 54-56 (“Another... fact, exist”)
- D) Lines 56-60 (“Related... reconstructed”)

18

As used line 48, “coloration” most nearly means

- A) characteristic quality.
- B) vivid intensity.
- C) artistic appearance.
- D) deliberate arrangement.

19

Which statement regarding the four reconstructed “wheel” words in Proto-Indo-European is best supported by the data in table 1?

- A) All four persist in nearly original forms in the Germanic languages.
- B) The four were widely borrowed by languages unrelated to Proto-Indo-European.
- C) None of the four developed into words in all of the Indo-European languages represented.
- D) Greek cognates likely differ more from the original four than Germanic cognates do.

20

The author would most likely agree with which statement about the existence of words associated with the word “*wegheti*” in several of the Indo-European languages in table 1?

- A) The likelihood that such words were used in Proto-Indo-European itself may be greater than scholars recognize.
- B) The origin of such words probably lies in the Proto-Indo-European word “\**k<sup>w</sup>el.*”
- C) The differences in pronunciation of such words in some Indo-European language make it difficult to determine if they are actually related.
- D) The existence of such words does not necessarily confirm that Proto-Indo-European speakers used wheeled vehicles.

21

According to the data in table 2, which pair of languages shown possesses the highest number of sound cognates among translation equivalents?

- A) Spanish and Italian
- B) Dutch and English
- C) Spanish and French
- D) German and English

Questions 22-32 are based on the following passage and supplementary material.

This passage is adapted from a book talking about star clusters.

Star clusters have been objects of intense study for more than a century. They are the glittering gems of the night sky, aggregations of a few hundred to about a million stars, usually forming a single gravitationally bound entity.

Most stars probably form within clusters, so the problem of understanding star formation is inextricably linked to understanding how clusters form. Clusters are important because they provide a sample of stars at the same age, with about the same chemical content, and at the same distance from Earth—which makes them useful for testing theories of stellar evolution. Because observers can identify and study star clusters in other galaxies at distances where individual stars can no longer be distinguished, astronomers gain insight into star-formation processes across a broad expanse of space and time.

"We live in the Milky Way, and as a result, we have a certain perspective about what we might call a star cluster," says Rupali Chandar, an astronomer at the University of Toledo, Ohio. In our parochial view, star clusters come in two flavors—open and globular—that at first glance could not be more different.

Open clusters reside in our galaxy's disk, typically contain stars no older than a billion years, and hold a few hundred to perhaps a few thousand solar masses. Their stars exhibit metallicity—the complement of elements heavier than helium—similar to or greater than our Sun's. Open clusters range in size from several to more than 50 light-years across and appear diffuse and irregularly shaped. About 1,000 have been cataloged, with the most famous examples being the familiar Pleiades and Hyades in Taurus. Thousands more likely exist beyond our ability to detect them.

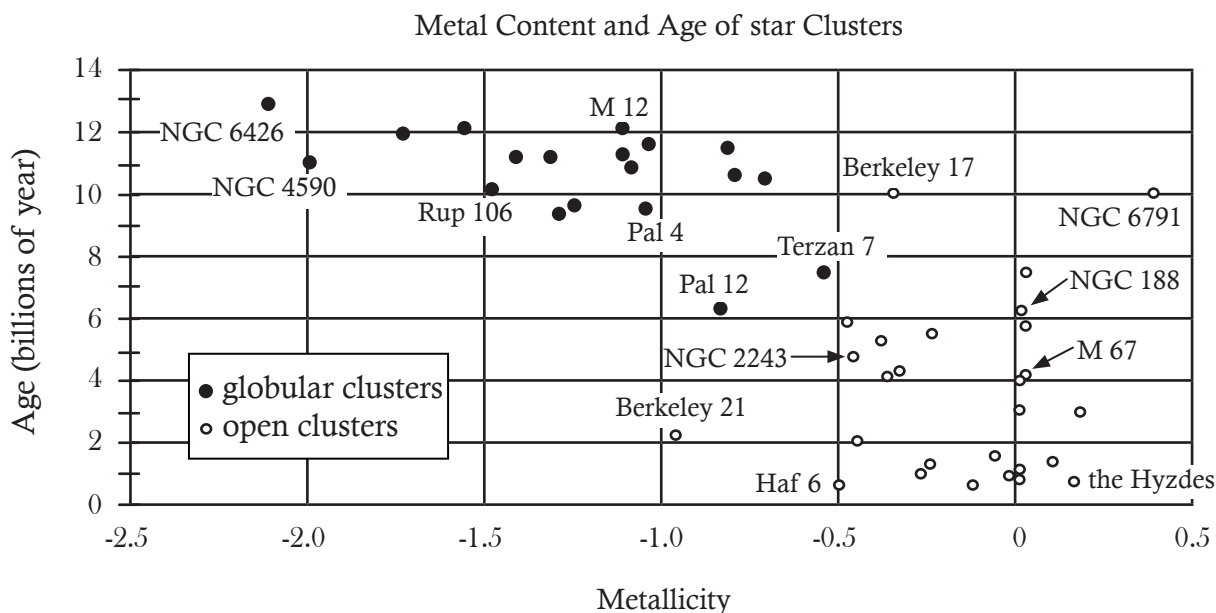
Globular clusters ride orbits highly inclined to the Milky Way's disk and are associated with

its more spherical halo and bulge components. Globulars typically contain 100,000 solar masses, all of it packed into a spherical or elliptical volume 100 or so light-years across. With ages around 12 billion years, globular clusters are truly ancient objects, a fact reflected in the low metallicity of their stars. About 150 globulars—including several visible to the Unaided eye—orbit the Milky Way.

Star clusters in the Andromeda Galaxy, the nearest large spiral, appear to break down in much the same way. "If we lived in Andromeda, I think probably it would reinforce our view of this dichotomy in cluster properties," Chandar says. But astronomers in a more extreme galactic environment—such as a galaxy undergoing a burst of intense star formation, like M82, or galaxies in the process of merging, like the Antennae—would reach starkly different conclusions.

"The main result [of work over the past 15 years] is that any time you look at starburst and merging galaxies, you see very rich systems of young, compact clusters," Chandar explains. "The most massive end of these, the brightest end, has all the properties—masses, sizes, current luminosities—we would expect of young globular clusters." If we could look at these massive young clusters far in the future, when the universe is twice its current age, they'd resemble the globular clusters we see orbiting the Milky Way today. Moreover, these objects aren't unique to disturbed galactic environments. They occur in normal spirals like M83 and NGC 6946, too.

When astronomers re-examine the Milky Way's cluster system with this realization in mind, the once-clear distinction between open and globular clusters becomes blurred. At 10 billion years old, Berkeley 17 is considered the oldest open cluster, but it overlaps the range of globular-cluster ages (8 to 12 billion years). The two cluster types show a slight overlap in metal content as well.



Sources: Data from M.Salaris and A.Weiss, "Homogeneous Age Dating of 55 Galactic Clusters." @2004 by European Southern Observatory; and from M.Salaris. A.Weiss and S.M. Percival, "The Age of the Oldest Open Clusters." @2004 by European Southern Observatory.

22

The primary purpose of the passage is to describe

- A) metallicity and how it is used to determine the ages of stars within dusters.
- B) types of star dusters and observations that cast doubt on how they are classified.
- C) methods used to estimate the ages of star dusters in merging galaxies.
- D) the distribution of star clusters associated with normal spiral galaxies.

23

It can reasonably be inferred from the passage that models describing how stars change over time are best tested using stars that

- A) have a set of characteristics in common with each other.
- B) orbit in the halo and bulge components of the Milky Way.
- C) were first studied more than 100 years ago.
- D) exhibit a metal content similar to that of the Sun.

24

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

- A) Lines 1-2("Star...century")
- B) Lines 6-9("Most...from")
- C) Lines 9-14("Clusters...evolution")
- D) Lines 40-42("Globular ... components")

25

What does the passage state about the young globular clusters seen in starburst and merging, galaxies?

- A) They are composed entirely of stars that ore more massive than the Sun.
- B) They will eventually dissipate, and their stars will spread through the host galaxy.
- C) They contain stars with a variety of chemical compositions.
- D) They will someday resemble the globular cluster we see today In the Milky Way.

26

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

- A) Lines 14-19("Because...time")
- B) Lines 24-26("In our...different")
- C) Lines 53-56("If we lived...says")
- D) Lines 69-73("If we could... today")

27

As used in line 25, "flavors" most nearly means

- A) qualities
- B) enhancements.
- C) varieties.
- D) surroundings

28

As used in line 47, "reflected" most nearly means

- A) examined.
- B) pondered.
- C) exhibited.
- D) speculated.

29

The author indicates that the metallicity of a star duster is directly related to the

- A) distance of the duster from the Sun.
- B) sizes of the stars in the duster.
- C) degree to which the duster is gravitationally bound
- D) ages of the stars in the cluster.

30

Which two clusters shown in the figure support the author's point that the "two cluster types show a slight overlap in metal content as well"(lines 84-85)?

- A) Pal 4 and Berkeley 17
- B) NGC 6426 and NGC 188
- C) Tarzan 7 and Berkeley 21
- D) Pal 12 and NGC 2243

31

According to the figure, what is the approximate metallicity of Pal 12?

- A) 6.2
- B) 1.2
- C) -0.8
- D) -1.2

32

The figure supports the author's point that the distinction between globular and open dusters is not as dear as once thought by showing that

- A) the youngest open dusters are less than 1 billion years old.
- B) NGC 6791 and Rup 106 are both about 10 billion years old.
- C) most globular dusters are between 8 and 12 billion years old.
- D) the metallicity of NGC 4590 is less than the metallicity of Pal 4.

Questions 33-42 are based on the following passage.

Passage 1 is adapted from Benjamin Franklin, information to Those Who Would Remove to America. Originally published in 1782. Passage 2 is adapted from J. Hector St. Jean de Crevecoeur. Letters from an American Farmer. Passage 2 was written sometime between 1769 and 1775 and originally published in 1782.

### Passage 1

Many persons in Europe, having directly or by Letters, expressed to the Writer of this, who is well acquainted with North America, their Desire of transporting and establishing  
 5 themselves in that Country; but who appear to have formed, through Ignorance, mistaken Ideas and Expectations of what is to be obtained there; he thinks it may be useful, and prevent inconvenient, expensive, and  
 10 fruitless Removals and Voyages of improper Persons, if he gives some clearer and truer Notions of that part of the World, than appear to have hitherto prevailed.

He finds it is imagined by Numbers, that the  
 15 inhabitants of North America are rich, capable of rewarding, and disposed to reward, all sorts of Ingenuity; that they are at the same time ignorant of all the Sciences, and, consequently, that Strangers possessing Talents must be highly  
 20 esteemed, and so well paid, as to become easily rich themselves; that there are also abundance of profitable Offices to be disposed of, which the Natives are not qualified to fill.... These are all wild Imaginations; and those who go to  
 25 America with Expectations founded upon them will surely find themselves disappointed.

The Truth is, that though there are in that Country few People so miserable as the Poor of Europe, there are also very few that in Europe  
 30 would be called rich; it is rather a general happy Mediocrity that prevails. There are few great Proprietors of the Soil, and few Tenants; most People cultivate their their own Lands, or follow some Handicraft or Merchandise; very  
 35 few rich enough to live idly upon their Rents

or Incomes, or to pay the high Prices given in Europe for Paintings, Statues, Architecture, and the other Works of Art, that are more curious than useful. Hence the natural Geniuses, that  
 40 have arisen in America with such Talents, have uniformly quitted that Country for Europe, where they can be more suitably rewarded. It is true, that Letters and Mathematical Knowledge are in Esteem there, but they  
 45 are at the same time more common than is apprehended: there being already existing nine Colleges or Universities besides a number of smaller Academies...

These Ideas prevailing more or less in all the  
 50 United States, it cannot be worth any Man's while, who has a means of Living at home, to expatriate himself, in hopes of obtaining a profitable civil Office in America.... Much less is it advisable for a Person to go thither, who  
 55 has no other Quality to recommend him but his Birth. In Europe it has indeed its Value; but it is a Commodity that cannot be carried to a worse Market than that of America, where people do not inquire concerning a Stranger.  
 60 *What is he? But, What can he do?*

### Passage 2

In this great American asylum, the poor of Europe have by some means met together, and in consequence of various causes; to what purpose should they ask one another what  
 65 countrymen they are? Alas, two thirds of them had no country. Can a wretch who wanders about, who works and starves, whose life is a continual scene of sore affliction or pinching penury, can that man call England or any  
 70 other kingdom his country? A country that had no bread for him, whose fields procured him no harvest. who met with nothing but the frowns of the rich, the severity of the laws, with jails and punishments; who owned not  
 75 a single foot of the extensive surface of this planet? No! Urged by a variety of motives, here they came. Everything has tended to regenerate them; new laws, a new mode of living, a new social system; here they are become men; in  
 80 Europe they were as so many useless plants,



wanting refreshing showers; they withered, and were mowed down by want, hunger, and war, but now by the power of transplantation, like all other plants they have taken root and  
85 flourished! Formerly they were not numbered in any civil lists of their country, except in those of the poor; here they rank as citizens. By what invisible power has this surprising metamorphosis been performed? By that of  
90 the laws and that of their industry. The laws, the indulgent laws, protect them as they arrive, stamping on them the symbol of adoption; they receive ample rewards for their labours; these accumulated rewards procure them lands; those  
95 lands confer on them the title of freemen, and to that title every benefit of is affixed which men can possibly require. This is the great operation daily performed by our laws. From whence proceed these laws? From our  
100 government. Whence the government? It is derived from the original genius and strong desire of the people ratified and confirmed by the crown.

33

The purpose of the first paragraph of Passage 1 is mainly to

- A) present Franklin's reason for writing the passage.
- B) summarize an argument by Franklin's critics.
- C) dispel some myths about North America.
- D) provide details about the process of emigrating from Europe to North America.

34

The primary purpose of lines 39-42 ("Hence... rewarded") is to provide support for the claim that

- A) North America produces more artists than Europe.
- B) North Americans consider handicrafts to be more important than fine art.
- C) North Americans spend little money on art.
- D) North Americans prefer European art to North American art.

35

Based on Passage 1, Franklin believes that the higher education system in North America is

- A) as good as any other such system in the world.
- B) stronger than many Europeans think.
- C) inaccessible to all but the very wealthy.
- D) too focused on science and mathematics.

36

In Passage 2, Crèvecoeur claims that two-thirds of immigrants to America "had no country" (line 66) mainly to emphasize the

- A) diversity of the American populace.
- B) scarcity of farmland in Europe.
- C) difficulty of the immigrants' lives in Europe.
- D) immigrants' desire to quickly assimilate life in America.

37

In Passage 2, the main purpose of the plant analogy (lines 79-85) is to

- A) contrast the stability of life in North America with the upheavals occurring in Europe.
- B) highlight the hardships of the life of a North American farmer.
- C) emphasize the importance of agriculture to most immigrants.
- D) illustrate the transformative effects of immigration to North America.

38

Which choice best supports the claim that Crèvecoeur believed his government to be a legitimate one?

- A) Lines 66-70 ("Can a... his country")
- B) Lines 76-77 ("Urged... came")
- C) Lines 99-100 ("From whence... our government")
- D) Lines 100-103 ("It is... crown")

39

Which choice best describes the styles and purposes of the passages?

- A) Franklin use a condescending tone to point out the advantages and disadvantages of immigrating to North America, whereas Crèvecoeur uses a satirical tone to mock the typical immigrant to North America.
- B) Franklin uses a matter-of-fact lone to discourage people from immigrating to North America, whereas Crèvecoeur uses a more optimistic tone to extol the virtues of life in North America.
- C) Both Franklin and Crèvecoeur use personal anecdotes to support the idea that the quality of life in North Americans for better than the quality of life in Europe.
- D) Both Franklin and Crèvecoeur use appeals to patriotism to discourage Europeans from immigrating to North America.

40

Based on the passages, both Franklin and Crèvecoeur would agree with which statement about social class in North America and Europe?

- A) The social class into which one was born is not as important to North Americans as it is to Europeans.
- B) The social class system is reinforced by governments in both North America and Europe.
- C) Europeans are not as concerned with social class as many North Americans think they are.
- D) Those who had lower social standing in Europe tend to be more prepared for immigration to North America than those who had higher social standing.

41

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

- A) Lines 49-53("These Ideas...America") and 76-77("Urged...came")
- B) Lines 53-55("Much...Birth")and 61-65("In this...are")
- C) Lines 53-55("Much...Birth")and 85-87 ("Formerly... citizens")
- D) Lines 56-60 ("In Europe ... do") and 85-87 ("Formerly... citizens")

42

Which choice best describes the main difference between Franklin's use of questions in Passage 1(Line 60) and Crèvecoeur' s use of questions throughout Passage 2?

- A) Franklin's questions are directed to the reader, whereas Crèvecoeur's questions are questions readers have asked him.
- B) Franklin's questions are used to cause the reader to reflect on his or her experience, whereas Crèvecoeur's questions are used to prompt the reader to take action.
- C) Franklin's questions are intended to encourage readers to reflect on their views of strangers, whereas Crèvecoeur's questions are intended to encourage readers to challenge their views of who is z citizen.
- D) Franklin's questions illustrate a claim rhetorically, whereas Crèvecoeur's questions are followed by answers.



Questions 43-52 are based on the following passage.

This passage is adapted from Meghan A. Duffy, "It Helps to Be Well Connected" ©2014 by the American Advancement for the Advancement of Science.

Parasites are everywhere. Yet despite this ubiquity, they are not in all places at all times. For a particular host-parasite pairing, infections vary greatly over space and time, with some but not all host populations suffering infections in a given year. What drives this variation? This question is important not just because parasites can have major ecological and evolutionary impacts, but also because disease outbreaks can have devastating impacts in agricultural systems and on species of conservation concern.

A long-term, large-scale study of a common weedy plant, *Plantago lanceolata*, and its fungal pathogen, powdery mildew, conducted by Jussi Jousimo *et al.*, involved a small army of about 40 field assistants who conducted annual censuses of —4000 populations over a 12-year period. The pattern revealed by this remarkable effort was surprising: The more connected a *Plantago* population was to other populations, the less likely it was to be colonized by the fungal pathogen.

This finding seems counterintuitive. If all else were equal, traditional theory for a set of populations linked by migration (a metapopulation) would predict that being closely connected to other populations should make colonization more likely, not less. But of course, all else is rarely equal. The apparent discrepancy between theory and Jousimo *et al.*'s findings can be resolved by considering differences in the average resistance of plants in different populations. Jousimo *et al.* showed experimentally that plants from highly connected populations are more resistant to the pathogen than those from less connected populations. This higher resistance makes it harder for the pathogen to establish itself in

highly connected populations. This key finding fits well within a growing body of literature showing that evolution can be rapid and has the potential to profoundly affect ecological dynamics.

Why are more connected populations more resistant? One possible reason is that more connected populations are exposed to the pathogen more often, selecting for higher resistance. This would maintain high resistance in the highly connected populations, whereas resistance would be, lost from the less connected populations because of fitness costs associated with resistance. There is some evidence for this in the data: The only low-resistance populations are ones with low connectivity. However, this explanation would also require highly connected populations to be routinely colonized by the pathogen. Jousimo *et al.*'s data suggest that this is not the case, although it seems possible that highly susceptible genotypes might become infected and die at a very early stage, before those infections can be detected by the annual survey.

Further work is thus needed to elucidate the eco-evolutionary dynamics in this system and to determine the drivers of the observed pattern. Knowledge of the mechanism underlying the results will help to predict when similar patterns of low resistance are likely to be seen in populations that are less connected to others in the metapopulation. This is particularly pressing given widespread habitat fragmentation; the results of the study suggest that, in some cases, fragmentation might increase the likelihood of a population suffering disease outbreaks.

It also remains to be shown whether the observed pattern holds for less fragmented metapopulations. The *Plantago* metapopulation studied by Jousimo *et al.* on the Åland archipelago in Finland is highly fragmented; do metapopulations with higher rates of migration between populations show similar patterns?

43

Which statement best identifies one of the author's implicit claims about the relationship between powdery mildew and *Plantago lanceolata*?

- A) Agricultural use of land where *Plantago lanceolata* is naturally found encourage the growth of powdery mildew.
- B) The geographical range of *Plantago lanceolata* is diminishing, while that of powdery mildew is expanding.
- C) Many fungi related to powdery mildew engage in host-parasite pairings with plants related to *Plantago lanceolata*.
- D) *Plantago lanceolata* populations infected by powdery mildew are harmed by the infection, at least in the short term.

44

As used in line 6, “drives” most nearly means

- A) causes.
- B) conveys.
- C) expels.
- D) urges.

45

It can reasonably be inferred from the passage that a high incidence of parasitic infection in a host species may

- A) promote the spread of disease in other host-parasite pairings.
- B) impact cultivated plants less significantly than it impacts wild plants.
- C) pose a distinct threat to species whose population sizes are decreasing.
- D) cause the host population to become a fragmented metapopulation.

46

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

- A) Lines 3-4 (“for a... time”)
- B) Lines 9-11 (“disease... concern”)
- C) Lines 12-18 (“A long-term... period”)
- D) Lines 18-22 (“The pattern... pathogen”)

47

The phrases “large-scale” and “small army,” used in the sentence in lines 12-15, mainly serve to emphasize the study’s

- A) extensive scope.
- B) paradoxical objectives.
- C) unwieldy methods.
- D) scientific importance.

48

Which statement best summarizes Jousimo *et al*’s findings on the relationship between the connectivity of *Plantago lanceolata* populations and their infection by powdery mildew?

- A) Populations with higher connectivity were less likely to be colonized by powdery mildew than populations with lower connectivity.
- B) Virtually no instances of powdery mildew infection were found in populations with a high degree of connectivity.
- C) Plants from populations with low connectivity showed no ill effects from exposure to powdery mildew.
- D) Powdery mildew infections spread more rapid in populations with high connectivity than in populations with low connectivity.

49

It can reasonably be inferred from the passage that the author views the results of the study conducted by Jousimo et al. as

- A) persuasive, because the results conform to accepted standards for scientific validity.
- B) striking, because the results initially appear to contradict established scientific opinion.
- C) controversial, because the results cast doubt on studies conducted by other scientists.
- D) groundbreaking, because the results were obtained using an innovative method.

50

Which choice best explains why periodic infection by a parasite might fail to be detected in a *Plantago lanceolata* population that demonstrates resistance to that parasite?

- A) Lines 29-33 ("The apparent... populations")
- B) Lines 33 -37 ("Jousimo... populations")
- C) Lines 45-48 ("One ... higher resistance")
- D) Lines 63- 67 ("it seems... survey")

51

The passage indicates that one characteristic of the metapopulation studied by Jousimo et al. was that

- A) all of its highly connected populations were immune to powdery mildew.
- B) many of its less connected populations demonstrated high resistance to powdery mildew.
- C) none of its highly connected populations possessed low resistance to powdery mildew.
- D) most of its fragmented populations were unaffected by powdery mildew.

52

Which choice best describes how the last paragraph functions in the passage?

- A) It identifies the need for research that builds on that described in the passage.
- B) It summarizes the key observations that are presented in the passage.
- C) It challenges the validity of the explanations offered by the scientists discussed in the passage.
- D) It presents an alternative explanation for a phenomenon that is noted in the passage.

**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.

### Teaching English Abroad

Given today's competitive job market, many students in the United States worry that they lack the skills needed to gain entry into a rewarding profession. **1** Therefore, the vast majority of these young people already possess one attribute that is in demand around the world: fluency in the English language. Millions, possibly even **2** billions — of people around the world would like to learn English or improve their ability to speak, read,

1

- A) NO CHANGE
- B) However,
- C) As a result.
- D) In addition,

2

- A) NO CHANGE
- B) billions'
- C) billions,
- D) billions;

3 or writing the language—and who better to teach this difficult subject than a native speaker? Such jobs are available in virtually every city in the world to English speakers 4 willing to take the proper steps.

The first step is to get certified. The 5 minimum qualification to teach English abroad is generally a bachelor's degree and some type of certificate in TESOL (Teaching English to Speakers of Other Languages). The good news is that TESOL certification programs are plentiful, are online, are relatively inexpensive, and can be completed in as few as six weeks. On the other hand, some experts warn that you should invest more than the bare minimum amount of time and money in your TESOL education. Poorly trained job seekers are far more likely to end up in positions with low pay, no benefits, and long hours.

3

- A) NO CHANGE
- B) or writing of
- C) and writing
- D) or write

4

- A) NO CHANGE
- B) willing of taking
- C) who, willing to take
- D) who are willing the taking of

5

- A) NO CHANGE
- B) standard path to the perfect career
- C) basic requirement to study English abroad
- D) traditional way to enter the workforce

6 Experts are not always right, though. There are many factors to consider. For example, if you want to save money, schools in South Korea and the Middle East tend to pay more and offer more benefits than schools in Latin America. However, teaching in Latin America is often a more popular option among job seekers from the United States, perhaps because, having taken Spanish in high school, these prospective teachers would prefer to live and work in a Spanish-speaking country than in one in which they do not speak the language.

The last step is to find a school. Some English teachers have 7 accidentally found positions by chance, traveling to a city of their choice and then answering a local ad, but experts recommend that it is better 8 for one to establish connections with a school before you travel. Some TESOL certification programs are skilled in placing students in jobs and providing support and connections along the way. Online job boards also

6

Which choice provides the clearest transition from the previous paragraph to this one?

- A) NO CHANGE
- B) These obstacles are easily overcome by most people.
- C) Of course, not everyone is cut out to be a language instructor.
- D) The second step is to choose a country or region in which to teach.

7

- A) NO CHANGE
- B) found positions by chance,
- C) found accidental positions by chance,
- D) chanced upon positions by accident.

8

- A) NO CHANGE
- B) for someone
- C) for them
- D) DELETE the underlined portion.

9 allows job seekers to and find out about opportunities in different schools, but beware: some prospective teachers have accepted what they thought were 10 tight job offers, only to arrive at the schools and find no job waiting for them. Regardless, 11 motivated job seekers have an extremely good chance of being successful.

9

- A) NO CHANGE
- B) allowing
- C) to allow
- D) allow

10

- A) NO CHANGE
- B) rigid
- C) firm
- D) stationary

11

At this point the writer is considering adding the following information.

with tens of thousands of English-language schools around the world.

Should the writer make this addition here?

- A) Yes, because it supports the sentence's point about the likelihood of finding a school.
- B) Yes, because it gives an example of the support that TESOL certification programs can provide.
- C) No, because it contradicts the previous sentence's point about online job boards.
- D) No, because it blurs the focus of the paragraph by introducing extraneous information.



Questions 12-22 are based on the following passage.

### The Dipylon Master

In the late **12** 1800s in Athens Greece, an excavation of an ancient cemetery for wealthy Athenians uncovered a treasure trove of enormous ceramic urns, some up to six feet **13** tall, they dated back to 750 BCE. Examination of the **14** urn's by archaeologists' revealed that most of them were made by the same artist, who came to be called the Dipylon Master (after the name of the cemetery). While the size of the urns was certainly impressive, the archaeologists were even more excited about the urns' decoration. The detailed painting on the urns was distinctive, and the Dipylon Master is now recognized for starting an artistic movement that produced some of the finest Greek pottery paintings ever made.

As archaeologists compared the works of the Dipylon Master with pottery pieces made in the years before and after him, **15** it became clear that he was an important transitional figure. Before the Dipylon Master.

12

- A) NO CHANGE
- B) 1800s; in Athens. Greece.
- C) 1800s. in Athens. Greece;
- D) 1800s in Athens. Greece,

13

- A) NO CHANGE
- B) tall, they were dated
- C) tall; dating
- D) tall, dating

14

- A) NO CHANGE
- B) urns by archaeologists
- C) urns' by archaeologists
- D) urns by archaeologists'

15

Which choice best establishes the main idea paragraph?

- A) NO CHANGE
- B) they concluded that his themes reflect prosperity and militarism of the period.
- C) they concluded that many wealthy Athenians wanted his vases.
- D) they came to recognize his distinctive way of portraying human figures.

pottery showed minimal decoration. **16** though Athens had long been a center for talented artists. But the Dipylon Master used more varied patterns, often combining **17** greater than one pattern on a single piece and thereby turning the available space into a field for individual creativity. Artists who followed the Dipylon Master continued his practices and built on **18** it, solidifying his role as the founder of a new artistic era.

16

- Which choice provides an example supporting the assertion made earlier in this sentence?
- A) NO CHANGE
  - B) which could be seen as a reflection of Athenian tastes at the time.
  - C) perhaps a few plain horizontal bands drawn around a vase.
  - D) and few other pottery artists showed comparable technical skill.

17

- A) NO CHANGE
- B) an excess of
- C) over
- D) more than

18

- A) NO CHANGE
- B) him, solidifying their
- C) them, solidifying their
- D) them, solidifying his

19 In addition to inventing a motif known as the "Dipylon wheel," he started the practice of using the surface of the pottery to tell a story in pictures, something not done by his predecessors. In addition to such decorative elements as bands of repeated squares or triangles, he included something else 20 new: included in the pottery were figures of animals and human beings arranged in scenes. These figures were not drawn in a three-dimensional, realistic style—they look more like stick figures—but they were shown engaging in activities that the viewer would recognize. A group of human figures riding in horse-drawn chariots, 21 likewise, would remind viewers of battles and heroes.

19

Which choice provides the most effective transition from the previous paragraph to this one?

- A) NO CHANGE
- B) What makes the Dipylon Master special is not just that he lavished decoration on pieces of pottery; he also
- C) In addition to showing a major interest in scenes of warfare and military processions, the Dipylon Master also
- D) The Dipylon Master employed a distinctive technique of using silhouettes in depicting human figures; he also

20

- A) NO CHANGE
- B) new, adding
- C) new;
- D) new. The things he included were

21

- A) NO CHANGE
- B) instead,
- C) for example,
- D) additionally.

One hundred years later, artists were still **22** imitating the Dipylon Master's practice of storytelling on pottery. But in a refinement of the technique, they began drawing more realistic looking people and animals, and they depicted characters from mythology and literature that their well-educated patrons would be able to identify. Whereas the Dipylon Master's works stood as commemorative markers in the cemetery, the pieces by later artists appeared in the homes of wealthy patrons. Many of these exquisite pieces now have places of honor in museums, and they can trace their origins directly to the innovative person who created the majestic Dipylon masterpieces.

22

- A) NO CHANGE
- B) cloning
- C) impersonating
- D) counterfeiting

Questions 23-33 are based on the following passage.

### Floating an idea to Stop Pollution

Pollution produced by fertilizer runoff is an increasingly significant problem facing waterways near farmland. In many regions, **23** wetlands, there once served to filter pollutants, have been cleared to make way for crops and buildings, and polluted water now flows directly into rivers. Excess nitrogen and phosphorus from fertilizer promote the growth of harmful algae blooms, which deplete oxygen from the water. The lack of oxygen, in turn, kills fish and other wildlife. An innovative solution to this problem of nutrient pollution—floating islands—would not control flooding as well as natural wetlands would, but floating islands are a better solution **24** than no solution at all.

Floating islands are wetland **25** replicas. They are constructed on bases of durable, buoyant materials. Some communities in India have made bases out of bamboo, and one US company is building bases out of recycled plastic bottles and adhesive foam. Using lightweight and recycled materials means that the cost of building the floating islands can be kept relatively low. Once the base has been formed, each island is covered in all-natural

23

- A) NO CHANGE
- B) wetlands; that
- C) wetlands that
- D) wetlands, which

24

- A) NO CHANGE
- B) than that of
- C) than being
- D) apart from

25

Which choice most effectively combines the sentences at the underlined portion?

- A) replicas; these are constructed
- B) replicas constructed
- C) replicas: these islands are constructed
- D) replicas; they constructed them

materials, such as soil and **26** sod, and seeded with native plants **27** whose roots grow through fine holes in the base into the water below. The islands can be made small enough to fit in a ditch or large enough to cover an area the size of a basketball court.

**28** No matter what size they are, the floating islands perform the same function that wetlands do by filtering substances from agricultural runoff. Over time, microbes attach to the underside of the islands where the base meets the water, and then, together with the plant roots, they clean the chemical pollutants from the water by absorbing nitrogen and phosphorus. One study showed

26

- A) NO CHANGE
- B) sod and seeded
- C) sod, and seeded,
- D) sod; and. seeded

27

The writer wants to enhance the reader's understanding of the plants' anchoring system. Which choice most effectively accomplishes this goal?

- A) NO CHANGE
- B) that include those capable of growing on recycled materials.
- C) so that they become an attractive part of the landscape.
- D) that create a virtual ecosystem.

28

The writer wants to remind readers of the first paragraph's discussion of floating islands and wetlands and to set up the ideas in this paragraph. Which choice most effectively accomplishes this goal?

- A) NO CHANGE
- B) Whether they are made of bamboo or recycled plastic,
- C) When placed in waterways leading to a river,
- D) Utilized by many countries.

that compared with a control **29** lagoon. A lagoon with floating islands contained 38 percent fewer nitrogen-containing compounds and 27 percent less total phosphorus after two years. **30**

29

- A) NO CHANGE
- B) lagoon, a
- C) lagoon; that a
- D) lagoon; however, a

30

At this point, the writer is considering adding the following sentence.

The islands provided the added benefit of supporting local wildlife such as birds, insects, and amphibians as effectively as natural wetlands.

Should the writer make this addition here?

- A) Yes, because it supports the argument that floating islands are a useful substitute for nature wetlands.
- B) Yes, because it reinforces the findings reported in the previous sentence.
- C) No, because it contradicts the information about floating islands provided in the second paragraph.
- D) No, because it does not explain how floating islands achieve this effect.



Researchers in India found more **31** fish, and a reduction in pollutants of up to 55 percent after the introduction of floating islands in particular areas in the Shipra River. Another study in the United States showed that floating islands **32** forbade the growth of harmful algae in ponds. These studies have shown that floating islands are successful at curbing the effects of polluted **33** runoff.

**31**

- A) NOCHANGE
- B) fish and
- C) fish, and
- D) fish, and...

**32**

- A) NO CHANGE
- B) binned
- C) inhibited
- D) denied

**33**

The writer is considering reviving the underlined portion to the following.

runoff and that more communities should embrace this practical solution to the problem of our diminishing wetlands.

Should the writer make this revision here?

- A) Yes, because it clarifies the environmental problem that has made the development of floating islands so important.
- B) Yes, because it strengthens the conclusion of the passage by recommending a course of action that follows logically from the argument.
- C) No, because it introduces a new perspective on floating Islands that does not belong in the concluding sentence of the passage.
- D) No, because it assumes that the reader is directly affected by this issue.

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

**Smart Minds. Smarter Impact**

In February 2014, *New York Times*

**34** columnist, Nicholas Kristof, published an op-ed titled "Smart Minds, Stim Impact. " **35** which he criticized academic researchers, specifically those in the social sciences, for their lack of participation in policymaking. **36** The column elicited heated discussion. Academics and policymakers both participated in this discussion. Those who agreed with Kristof asserted that academics are largely absent from public discussion and debate, that academics publish only for an audience of other academics, and that academic research is too abstract and theoretical to be useful to government officials.

34

- A) NO CHANGE
- B) columnist Nicholas Kristof
- C) columnist Nicholas Kristof,
- D) columnist, Nicholas Kristof

35

- A) NO CHANGE
- B) and in which criticized
- C) In which, criticizing
- D) In which he criticized

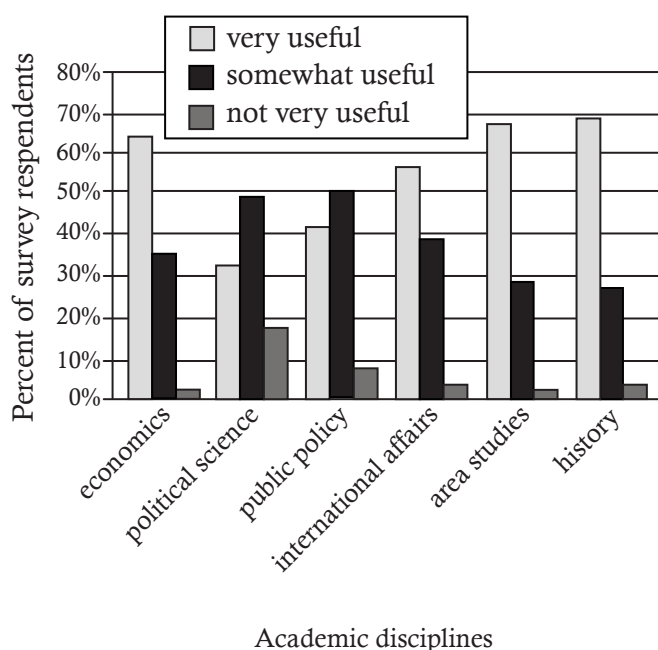
36

Which choice most effectively combines the underlined sentences?

- A) Eliciting heated discussion, the column was discussed by academics and policymakers.
- B) The column, which elicited heated discussion, was discussed among academics and among policymakers, too.
- C) Heated discussion of the column was participated in by academics and policymakers alike.
- D) The column elicited heated discussion among academics and policymakers alike.

Prompted by Kristof's **37** charges, the magazine *Foreign Policy* shared the results of a survey of 234 current and former senior government officials. The survey **38** results, making clear that policymakers do not regard even some seemingly relevant academic disciplines as useful in decision-making. Just over 30 percent of survey respondents, for instance, rated political science as "very useful," **39** In contrast, fewer than 5 percent of respondents assigned the "not very useful" rating to the disciplines of economics, international affairs, area studies, and history.

**Figure 1**  
which Disciplines Are Useful?



Adapted from Paul C. Avey and Michal C. Desch, "Does the Academy Matter?" ©2014 by The FP Group.

**37**

- A) NO CHANGE
- B) oversights.
- C) advances
- D) aggressions.

**38**

- A) NO CHANGE
- B) results. which make
- C) results making
- D) results make

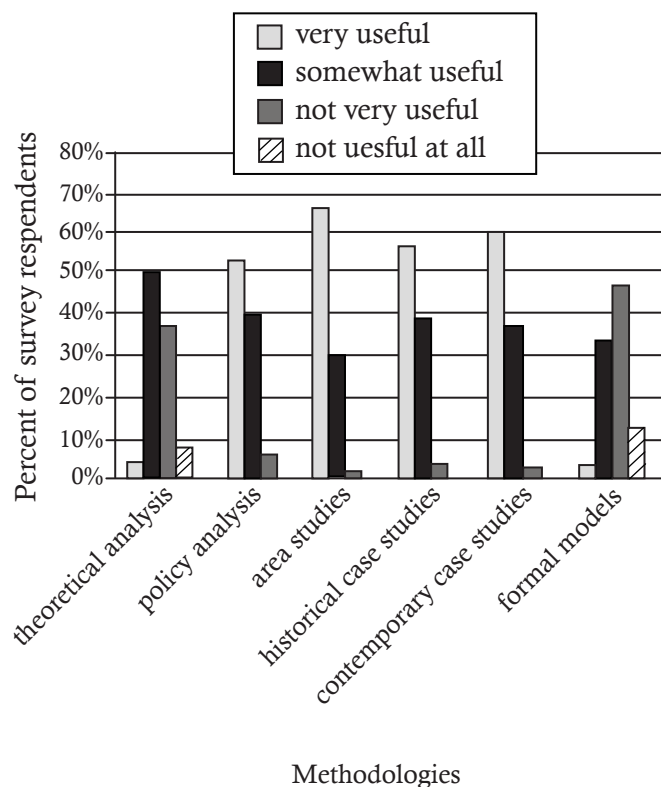
**39**

The writer wants to use accurate and relevant data from figure I to set up the contrast developed in the next sentence. Which choice best accomplishes this goal?

- A) Nearly 20 percent went so far as to rate political science as "not very useful."
- B) Some disciplines, such as economics, area studies, and history, were rated as "very useful" by more than 60 percent of respondents.
- C) Almost 70 percent of respondents rated history as "very useful," whereas fewer than 10 percent rated this discipline as "somewhat useful."
- D) No more than 50 percent of respondents gave any discipline a rating of "somewhat useful."

Furthermore, as summarized in figure 2, policymakers consider some methodologies more useful than others. In particular, policy analysis, area studies, and historical and contemporary case studies were rated favorably for their utility. Unpopular methodologies include formal models. **40** rated by about 45 percent of respondents as "somewhat useful." Academics who wish to respond to Kristof's call to action would **41** thus be wise to consider which disciplines and methodologies are most useful to policymakers.

**Figure 2**  
which Methodologies Are Useful?



Adapted from Paul C. Avey and Michal C. Desch, "Does the Academy Matter?" ©2014 by The FP Group.

40

Which choice completes the sentence with accurate and relevant data from figure 2?

- A) NO CHANCE
- B) rated as "not useful at all" by almost half of all respondents.
- C) which, out of all the methodologies, received the highest proportion of "somewhat useful" ratings.
- D) which were rated by about 45 percent of respondents as "not very useful" and by a little over 10 percent as "not useful at all "

41

- A) NO CHANGE
- B) thus be wise to consider,
- C) thus be wise to consider
- D) thus, be wise to consider.

**42** Daniel Drezner, a professor of international policy at Tufts University, notes that his most influential work in policymaking was an article about the role of US debt in the relationship between China and the United States. Though well received by policymakers, the article didn't do much **43** to further Drezner's academic career. "That article did not develop a new theory or Uncover a new hypothesis," said Drezner. "It merely confirmed what most scholars already believed. This kind of research isn't seen as 'cutting edge'—the kiss of death in the academy." Perhaps Kristof's criticism, instead of targeting academics themselves, should have focused more specifically on academic institutions, which, in addition to rewarding what's new, **44** need to handle this situation differently.

**42**

Which choice most effectively shifts the passage's focus to the topic of the new paragraph?

- A) Some academic researchers, however, responded vehemently to Kristof's column, claiming that in fact, they have a long history of involvement with policymaking.
- B) Moreover, academics who want their research to be useful to policymakers should conduct a survey of their own to gain a better understanding of policymakers' needs.
- C) To really effect change, however, universities and other academic employers need to encourage academics' contributions to policymaking.
- D) Policymakers, too, need to consider how they might make better use of the academic research that is currently being published.

**43**

- A) NO CHANGE
- B) to farther along
- C) to farther
- D) for furthering on

**44**

Which choice provides the strongest conclusion to the passage?

- A) NO CHANGE
- B) ought to reward what's useful.
- C) might reconsider some of their own policies.
- D) would be better off with an alternative approach.

**STOP**

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



# Math Test – No Calculator

## 25 MINUTES, 20 QUESTIONS

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

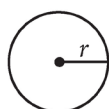
### DIRECTIONS

For questions 1-15, solve each problem, choose the best answer from the choices provided, and fill in the corresponding circle on your answer sheet. For questions 16-20, solve the problem and enter your answer in the grid on the answer sheet. Please refer to the directions before question 16 on how to enter your answers in the grid. You may use any available space in your test booklet for scratch work.

### NOTES

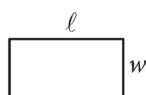
1. The use of a calculator **is not permitted**.
2. All variables and expressions used represent real numbers unless otherwise indicated.
3. Figures provided in this test are drawn to scale unless otherwise indicated.
4. All figures lie in a plane unless otherwise indicated.
5. Unless otherwise indicated,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

### REFERENCE

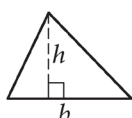


$$A = \pi r^2$$

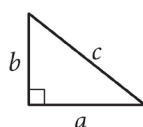
$$C = 2\pi r$$



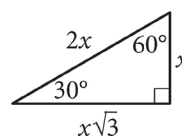
$$A = \ell w$$



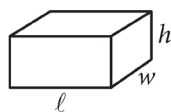
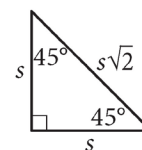
$$A = \frac{1}{2}bh$$



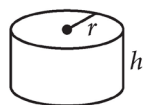
$$c^2 = a^2 + b^2$$



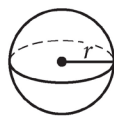
Special Right Triangles



$$V = \ell wh$$



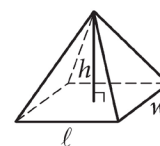
$$V = \pi r^2 h$$



$$V = \frac{4}{3}\pi r^3$$



$$V = \frac{1}{3}\pi r^2 h$$



$$V = \frac{1}{3}\ell wh$$

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

The number of radians of arc in a circle is  $2\pi$ .

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



1

Temperature in degrees Celsius (°C)	Physical state of granite
1,100	solid
1,200	solid
1,300	liquid
1,400	liquid
1,500	liquid

The table above shows the physical state of granite at various temperatures  $T$ , measured in degrees Celsius (°C). Which of the following inequalities could describe the set of temperatures for which granite is in a solid state?

- A)  $T < 1,250^{\circ}\text{C}$
- B)  $T < 1350^{\circ}\text{C}$
- C)  $T > 1,450^{\circ}\text{C}$
- D)  $T > 1,550^{\circ}\text{C}$

2

Which of the following is equivalent to the expression  $4x(x^2 + 3) - 5(x^2 + 3)$ ?

- A)  $4x^5 - 5x^4 + 36x - 45$
- B)  $16x^4 + 60x^3 - 20x^2 - 75x$
- C)  $4x^3 - 5x^2 + 12x - 15$
- D)  $4x^3 - 5x^2 + 4x + 15$

3

$$8x - 12 = 48$$

If  $x$  is the solution of the equation above, what is the value of  $2x - 3$ ?

- A) 4
- B) 8
- C) 12
- D) 24

4

If  $(2a + 4b)^2 = 100$ , which of the following is a possible value of  $a + 2b$ ?

- A) 5
- B) 12.5
- C) 25
- D) 50



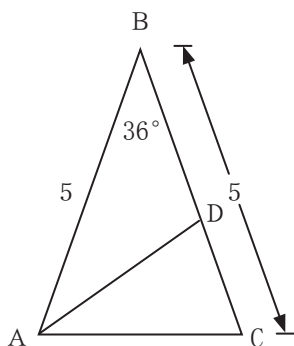


5

Dan bought some apples and oranges. The apples cost \$0.90 per pound, and the oranges cost \$1.30 per pound. If Dan spent \$8.85 in total and bought 3 pounds of oranges, how many pounds of apples did Dan buy?

- A) 4.5
- B) 5
- C) 5.5
- D) 6

6



For isosceles triangle ABC shown above,  $AB = BC = 5$  and the measure of angle ABC is  $36^\circ$ . If  $\angle BAC$  is bisected by  $\overline{AD}$ , which of the following statements must be true?

- A)  $AB = AC = BC$
- B)  $AD = BD = AC$
- C)  $BD = CD = AC$
- D)  $AB = BD = AD$

7

$$x^2 - 10x - 9 = -25$$

The solutions of the equation above are  $t$  and  $u$ . If  $t > u$ , what is the value of  $t - u$ ?

- A) 4
- B) 6
- C) 8
- D) 10

8

If Jessica runs at a constant speed of 12 miles every 2 hours, which of the following functions represents the number of miles,  $m$ , Jessica runs in  $t$  hours?

- A)  $m(t) = 24t$
- B)  $m(t) = 12t$
- C)  $m(t) = 6t$
- D)  $m(t) = 2t$

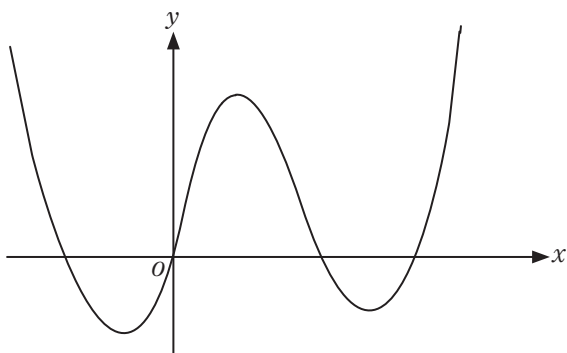


9

The manager of a small catering business prepares  $c$  cups of punch for a party of  $n$  people, where  $c=3n+5$ . According to the equation, how many additional cups of punch does the manager prepare for each additional person at the party?

- A) 1
- B) 3
- C) 5
- D) 8

10



Which of the following could be an equation of the graph above?

- A)  $y = x(x-1.1)(x-1)(x-3)$
- B)  $y = x(x-29)(x-20)(x+10)$
- C)  $y = x(x-70)(x+20)(x+25)$
- D)  $y = (x-500)(x-100)(x+175)(x+150)$

11

$$\frac{x^2-2x-15}{x^2-9} \cdot \frac{x-3}{x}; x \neq -3, 0, 3$$

Which of the following expressions is equivalent to the one above?

- A)  $\frac{x-5}{x}$
- B)  $\frac{x+5}{x}$
- C)  $\frac{x^2-5x}{x^2-6x+9}$
- D)  $\frac{x^2-2x-15}{x^2-3x}$

12

Jim has a savings account into which he made an initial deposit of  $a$  dollars and has made no deposits or withdrawals since then. The amount of money,  $P$ , in the account  $t$  years after the initial deposit is given by the equation below.

$$P=a(1.01)^t$$

By what percent did the amount of money in the account grow from the beginning of year 2 to the beginning of year 4?

- A) 0.01%
- B) 1.00%
- C) 2.01%
- D) 3.03%



13

The organizer of an event can spend up to \$815 on prizes. Each prize costs either \$25 or \$50, and she must purchase a minimum of 20 prizes. What is the maximum number of \$50 prizes she could purchase?

- A) 12
- B) 16
- C) 20
- D) 32

14

$$y-4 = \frac{1}{3}(x-1)$$

$$y-4 = \frac{1}{3}(x-1)^2$$

One solution,  $(x,y)$ , of this system of equations is  $(1,4)$ . What is the  $y$ -value of the other solution?

- A) 2
- B) 3
- C)  $\frac{11}{3}$
- D)  $\frac{13}{3}$

15

$$\sqrt{3+x} = \frac{1}{3}x + \frac{3}{2}$$

What is the sum of the solutions of the equations above?

- A) 4
- B) 2
- C) 0
- D) -2



# DIRECTIONS

For questions 16-20, 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  $3\frac{1}{2}$  is entered into the grid, it will be interpreted as  $\frac{31}{2}$ , not  $3\frac{1}{2}$ .)
- Decimal answers:** If you obtain a decimal answer with more digits than the grid can accommodate, it may be either rounded or truncated, but it must fill the entire grid.

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

Write answer in boxes. →

7	/	1	2
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○

← Fraction line

Grid in result.

Answer: 2.5

	2	.	5
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○

← Decimal point

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

	2	/	3
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○

.	6	6	6
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○

.	6	6	7
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○

Answer: 201 – either position is correct

	2	0	1
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○

2	0	1	
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○
○	○	○	○

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

3



3

16

Abel and Cedric will share a total of \$180.  
Abel will receive half as much as Cedric.  
What amount, in dollars, will Cedric receive  
(Disregard the \$ sign when gridding your  
answer.)

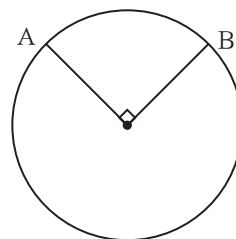
17

If  $f(x) = 2x^2 - 3x + 7$ , what is the  $y$ -intercept of  
the graph of  $g(x) = 3 \cdot f(x)$  in the  $xy$ -plane?

18

If  $x + 2y = 500$  and  $3x - 4y = 875$ , what is the  
value of  $y$ ?

19



In the circle above,  $O$  is the center and  $OB = 4$ .  
If the length of arc  $\widehat{AB}$  is  $a\pi$ , where  $a$  is a  
constant, what is the value of  $a$ ?

20

If  $\sin 36^\circ = \cos x^\circ$ , where  $0 < x < 360$ , what  
is a possible value of  $x$ ?

**STOP**

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

更多资料请加群：362066974

**No Test Material On This Page**



# Math Test – Calculator

## 55 MINUTES, 38 QUESTIONS

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

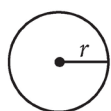
### DIRECTIONS

For questions 1-30, solve each problem, choose the best answer from the choices provided, and fill in the corresponding circle on your answer sheet. For questions 31-38, solve the problem and enter your answer in the grid on the answer sheet. Please refer to the directions before question 16 on how to enter your answers in the grid. You may use any available space in your test booklet for scratch work.

### NOTES

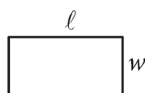
1. The use of a calculator is permitted.
2. All variables and expressions used represent real numbers unless otherwise indicated.
3. Figures provided in this test are drawn to scale unless otherwise indicated.
4. All figures lie in a plane unless otherwise indicated.
5. Unless otherwise indicated, the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

### REFERENCE

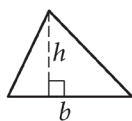


$$A = \pi r^2$$

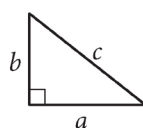
$$C = 2\pi r$$



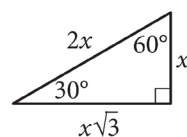
$$A = \ell w$$



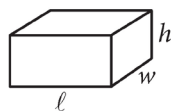
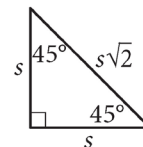
$$A = \frac{1}{2}bh$$



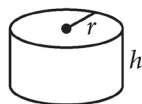
$$c^2 = a^2 + b^2$$



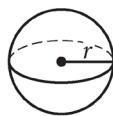
Special Right Triangles



$$V = \ell wh$$



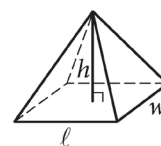
$$V = \pi r^2 h$$



$$V = \frac{4}{3}\pi r^3$$



$$V = \frac{1}{3}\pi r^2 h$$



$$V = \frac{1}{3}\ell wh$$

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

The number of radians of arc in a circle is  $2\pi$ .

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



1

Rodrigo has read 135 pages of a novel that contains 330 pages. If Rodrigo continues to read at a rate of 15 pages per day, how many days will it take him to read the rest of the novel?

- A) 9
- B) 13
- C) 18
- D) 22

2

If  $a=7$ , how much greater than  $2a - 1$  is  $6a-5$ ?

- A) 0
- B) 22
- C) 24
- D) 43

3

Malique had  $x$  dollars and bought  $y$  stamps that cost \$0.45 each. Which of the following expressions represents the amount of money, in dollars, Malique had left after he bought the stamps?

- A)  $x-0.45y$
- B)  $x+0.45y$
- C)  $100x-4.5y$
- D)  $100x-45y$

4

Lucy can fill an empty container with spring water for \$8.75 when springwater cost \$1.75 per gallon. How much will it cost Lucy to fill the same empty container with spring water that cost \$2.00 per gallon?

- A) \$9.00
- B) \$10.00
- C) \$11.00
- D) \$12.00





5

Emma works in a coffee shop where she is paid at the same hourly rate each day. She was paid \$71.25 for working 7.5 hours on Monday. If she worked 6 hours on Tuesday, how much was she paid on Tuesday?

- A) \$51.00
- B) \$57.00
- C) \$63.00
- O) \$69.00

6

If 8 minus  $y$  is equal to 6, what is the value of  $y$ ?

- A) -6
- B) -2
- C) 2
- D) 14

7

Joth's bank charges 2% interest on his credit card balance each month. The balance on his credit card last month was \$1,450. How much interest did the bank charge on the balance that month?

- A) \$0.29
- B) \$2.90
- C) \$14.50
- D) \$29.00

8

To determine if age and gender are related to pet ownership at his school, Mark selected a random sample of 50 male 14- to 15-year-old students from the school and a random sample of 60 female 17- to 18-year-old students from the school. For each student, he recorded the student's age, gender, and whether the student owned a pet. Which of the following provides the best explanation for why Mark cannot draw a valid conclusion from this study?

- A) The sample sizes are too small.
- B) The two samples are not of equal size.
- C) Mark will be unable to tell whether a difference in pet ownership is related to age because the two age groups are too close in age.
- D) Mark will be unable to tell whether a difference in pet ownership is related to gender because of the difference in age. Similarly, he will be unable to tell whether a difference in pet ownership related to age.



9

Which of the following ordered pairs  $(x,y)$  satisfies both of the equations  $y=x^2-8x+11$  and  $y=-2x+6$ ?

- A)  $(-1,8)$
- B)  $(0,11)$
- C)  $(1,-4)$
- D)  $(5,-4)$

10

Which of the following expressions is

equivalent to  $\left(4x^{\frac{1}{2}}y^{\frac{1}{3}}\right)^3$ ?

- A)  $4x^{\frac{3}{2}}y$
- B)  $64x^{\frac{3}{2}}y$
- C)  $4x^{\frac{1}{8}}y^{\frac{1}{27}}$
- D)  $64x^{\frac{1}{2}}y^{\frac{1}{3}}$

11

Students classify a rock collection according to the predominant color of each rock and type of rock. The number of rocks in each classification is shown below.

Rock classifications

Rock color	Igneous	Metamorphic	Sedimentary	Total
Black	16	3	1	20
Brown	8	11	45	64
Gray	14	0	38	52
Red	22	0	6	28
Pink	9	0	0	9
Tan	0	7	1	8
White	4	14	19	37
Total	73	35	110	218

A student selects a rock at random and notices it is gray. Given this information, which of the following is closest to the probability that the selected rock is sedimentary?

- A) 0.17
- B) 0.24
- C) 0.35
- D) 0.73



12

A total of 180 space walks, with a combined durations of 1,130 hours, were required to assemble the International Space Station. In which of the following equations does  $x$  represent the average(arithmetic mean) duration, in hours, of the 180 space walks?

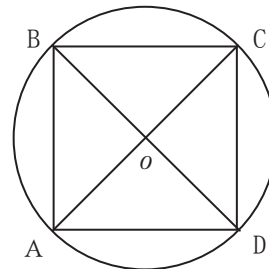
- A)  $1.130=180x$
- B)  $180=1.130x$
- C)  $x=(180)(1.130)$
- D)  $x=180+1,130$

13

A circle in the  $xy$ -plane has center  $(-5,-6)$ , and the point with coordinates  $(-8,-10)$  is on the circle. What is the diameter of the circle?

- A) 5
- B) 10
- C) 15
- D) 25

14



In the figure above, square ABCD is inscribed in the circle with center  $O$  and radius 3. What is the length of  $\overline{AB}$ ?

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

15

A snack company advertises that their bags of pretzels contain, on average, 1 pound of pretzels. To test this, Sam selected at random 50 bags of pretzels produced by the company and weighed the contents of each bag. Based on his measurements, Sam estimated that the average weight of a bag of pretzels produced by the company is 0.95 pounds, with a margin of error of 0.13 pounds. Which of the following is the most plausible conclusion about the true average weight  $w$ , in pounds, of a bag of pretzels produced by the company?

- A)  $w = 0.95$
- B)  $0.82 \leq w \leq 0.95$
- C)  $0.82 \leq w \leq 1.08$
- D)  $0.95 \leq w \leq 1.08$



Questions 16-18 refer to the following information.

Estimated Total Daily Water Usage, in Millions of Gallons, for New Jersey in 2005

Type	Source	
	Groundwater	Surface water
Fresh	592.00	1,340
Saline	0.01	5,460

The table above shows the estimated water usage, in millions of gallons per day, by source and type, for New Jersey in 2005. In 2005, New Jersey had an estimated population of 8,720,000.

16

Which of the following is closest to the proportion of estimated daily usage of surface water that was fresh?

- A) 0.20
- B) 0.25
- C) 0.69
- D) 0.80

17

Approximately what percent of the estimated daily water usage was both groundwater and fresh?

- A) 8%
- B) 18%
- C) 20%
- D) 34%

18

Which of the following best approximates the estimated water usage of groundwater in acre-feet per year?

(1 million gallons = 3.07 acre-feet)

- A) 0.05
- B) 1.19
- C) 11.21
- D) 121.40

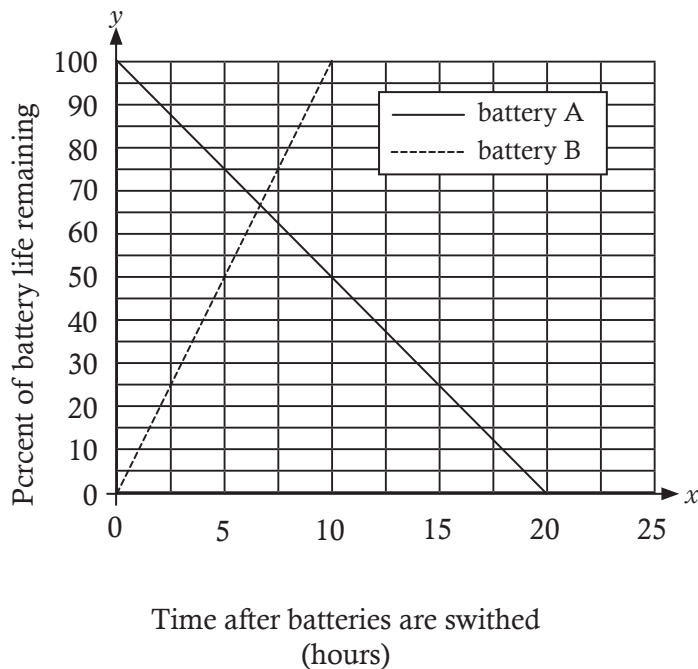
19

The value of  $x$  is more than the value of  $y$ . The sum of  $3x$  and  $4y$  is 20 less than the value of  $8x$ . What is the value of  $x$ ?

- A) 5
- B) 6
- C) 8
- D) 12



Questions 16-18 refer to the following information.



Dennis has two batteries for his mobile phone. When battery B is drained, he places it in a charger and puts battery A into the phone. The graph above relates the percent of battery life remaining for the two batteries to the time, in hours, after they are switched.

20

Which of the following gives the percent of battery life remaining,  $y$ , for battery A in terms of the number of hours,  $x$ , after battery A and battery B are switched?

- A)  $y = -5x + 20$
- B)  $y = -5x + 100$
- C)  $y = -10x + 100$
- D)  $y = -20x + 100$

21

Which of the following can be concluded from comparing the line representing battery A to the line representing battery B?

- A) The rate at which battery A discharges is greater than the rate at which battery B discharges.
- B) The rate at which battery A charges is greater than the rate at which battery B discharges.
- C) The rate at which battery B charges is greater than the rate at which battery A discharges.
- D) The rate at which battery B discharges is greater than the rate at which battery A charges.



22

In economics, Okun's law states that the percentage change in the unemployment rate,  $\Delta r$ , from one quarter to the next is related to the quarterly percentage change in the gross domestic product (GDP),  $\Delta G$ , as defined by the equation below.

$$\Delta G = 0.856 - 1.827(\Delta r)$$

- A) The quarterly percentage change in the GDP for every 1% change in the unemployment rate
- B) The quarterly percentage change in the GDP to maintain the same unemployment rate
- C) The percentage change in the unemployment rate if the change in the GDP is 0%
- D) The percentage change in the unemployment rate for every 1% change in the GDP

23

Which of the following is equivalent to  $\frac{x^2-2}{x-2}$

- A)  $x + 2$
- B)  $x + 4$
- C)  $x + 2 + \frac{2}{x-2}$
- D)  $x + 2 + \frac{2}{x^2-2}$



Questions 24 and 25 refer to the following information.

$$F = \frac{mv^2}{r}$$

The formula above relates the centripetal force  $F$ , in newtons, acting on an object traveling in a circular path to the object's mass  $m$ , its velocity  $v$  and the radius  $r$  of its path.

24

If the velocity of the object is doubled, which of the following equations expresses the new centripetal force,  $N$  of the object, in terms of the original centripetal force  $F$ ?

- A)  $N = 4F$
- B)  $N = 2F$
- C)  $N = \frac{1}{2}F$
- D)  $N = \frac{1}{2}F$

25

Of the following equations, which is NOT equivalent to the formula for centripetal force?

- A)  $Fr = mv^2$
- B)  $\frac{v^2}{F} = \frac{m}{r}$
- C)  $\frac{Fr}{m^2} = \frac{v^2}{m}$
- D)  $r = \frac{mv^2}{F}$





26

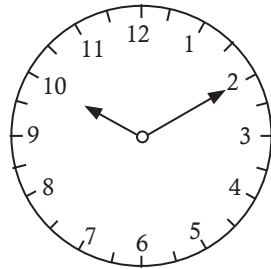
In 2015, XYZ Railroad made a plan to reduce the number of railroad cars in service by 12 cars per year for each of the next 15 years. Which of the following types of expressions could be used to model the number of cars XYZ Railroad has in service  $n$  years after 2015, where  $n$  is an integer from 1 to 15?

- A)  $a + bn$ , where  $a$  is a positive constant and  $b$  is a negative constant
- B)  $a + bn$ , where  $a$  is a negative constant and  $b$  is a positive constant
- C)  $a(b)^n$ , where  $a$  is a positive constant and  $b$  is a constant such that  $b > 1$
- D)  $a(b)^n$ , where  $a$  is a positive constant and  $b$  is a constant such that  $0 < b < 1$

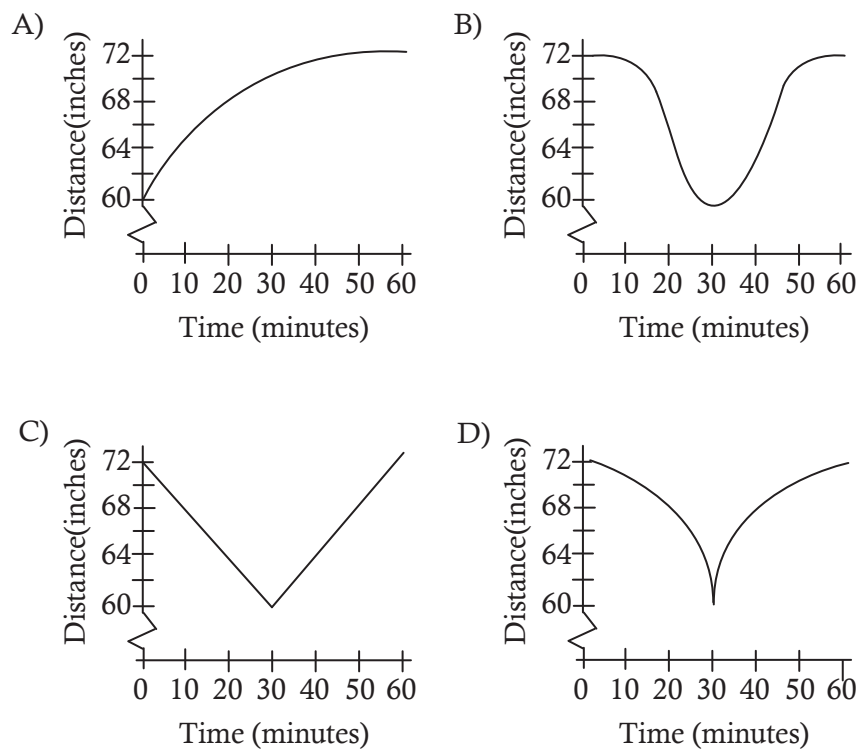
27

A piece of jewelry is initially valued at \$100. Every month the value of the piece of jewelry increases by 1% of its value the previous month. Which of the following represents the value  $Q(t)$ , in dollars, of the piece of jewelry at the end of  $t$  months?

- A)  $Q(t) = 100 \left( 1 + \frac{t}{100} \right)$
- B)  $Q(t) = 100 \left( 1 + .01 \right)^t$
- C)  $Q(t) = 100 \left( 1 + \frac{.01}{12} \right)^t$
- D)  $Q(t) = 100 \left( 1 + (.01)^t \right)$



The circular dock shown above has diameter 14 inches, and its minute hand has length 6 inches. It is placed on the wall so that the center of the clock is 66 inches above the ground. Which of the following graphs could represent the distance from the tip of the arrow of the minute hand to the ground with respect to time from 10 a.m. to 11 a.m.?





29

Larry plans to make at least 10 pounds of a snack mix that will consist of almonds and dried fruit. If he wants the snack mix to be at least 60% almonds by weight, which of the following systems of inequalities represents,  $a$ , and the number of pounds of dried fruit,  $f$ ?

A)  $a + f \leq 10$

$0.6a \leq f$

B)  $a + f \geq 10$

$0.6f \leq a$

C)  $a + f \geq 10$

$1.5f \leq a$

D)  $a + f \leq 10$

$1.5a \geq f$

30

The speed of light in a vacuum is  $3.00 \times 10^8$  meters per second. Given that 1 kilometer is equal in approximately 0.62 miles, which of the following is closest to the speed of light in a vacuum, in miles per hour?

A)  $1.12 \times 10^7$

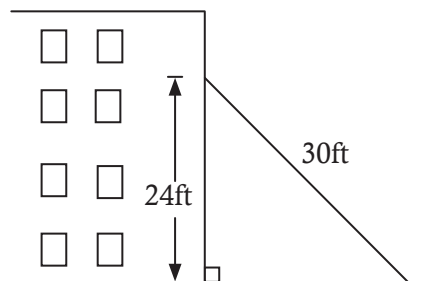
B)  $1.86 \times 10^3$

C)  $1.86 \times 10^8$

D)  $6.70 \times 10^8$

31

A 30-foot-long ladder is leaning against a building, as shown below.

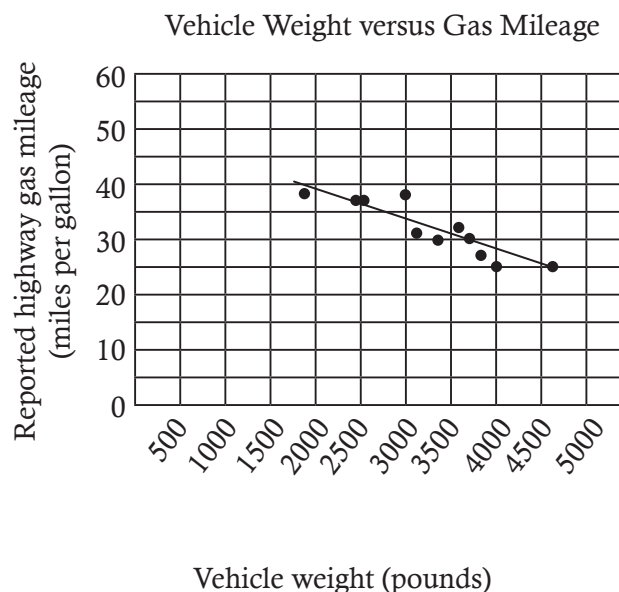


The top of the ladder is resting on the building at a point 24 feet above the ground. How many feet from the base of the building is the bottom of the ladder?



32

The scatterplot below represents the weights of several vehicles and their reported highway gas mileages. A line of best fit for the data is also shown.



How much greater is the reported highway gas mileage, in miles per gallon, for the vehicle weighing 3000 pounds than what is predicted by the line of best fit?

33

A teacher determines a student's course grade by computing the mean of 4 scores, 3 unit test scores and the final exam score. If a student misses a unit test, the final exam score is used once as the final exam score and once in place of the missing unit test score. What is the course grade for a student who receives scores of 76 and 80 on 2 unit tests, misses 1 unit test, and earns a score of 72 on the final exam?

34

A refrigerator that was originally priced at \$2500 had its price reduced by 40 percent. If an additional 15 percent was taken off the reduced price, what was the price, in dollars, of the refrigerator after the two reductions were applied? (Disregard the 5 sign when gridding your answer.)

35

Katia designed a wilder headset that she intends to sell. She uses the inequality  $100,000 \leq x \leq 300,000$  to estimate the profit  $x$ , in dollars, she could make from selling 20,000 headsets. What is the maximum profit, in dollars, she could expect to make per headset sold? (Disregard the \$ sign when gridding your answer.)



36

The function  $f(x) = 158x^2 - 770x + 1000$ , where  $x$  represents the number of years after 1970, can be used to model the number of college-bound students,  $f(x)$ , who take a test to receive college credit for a biology course. Based on the model, how many more students took the test in 2004 than in 2003?

37

On May 20, 2012, Victor's tenth grandchild was born, and the average (arithmetic mean) age of his other 9 grandchildren was 10 years. What will be the average age, in years, of Victor's 10 grandchildren on May 20, 2013?

38

$$2y + 7x = 2c$$

$$3y + 9x = c$$

In the system of linear equations above,  $c$  is a nonzero constant. The graphs of the equations are two lines in the  $xy$ -plane that intersect at  $(k, -44)$ . What is the value of  $k$ ?

**STOP**

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

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# 2016 年 12 月新 SAT 北美卷答案



Reading				Writing				Math1		Math2	
题号	答案	题号	答案	题号	答案	题号	答案	题号	答案	题号	答案
1	D	41	D	1	B	41	A	1	A	1	B
2	A	42	D	2	C	42	B	2	C	2	C
3	A	43	D	3	D	43	A	3	C	3	A
4	B	44	A	4	A	44	B	4	A	4	B
5	C	45	C	5	A			5	C	5	B
6	B	46	B	6	D			6	B	6	C
7	C	47	A	7	B			7	B	7	D
8	C	48	A	8	D			8	C	8	D
9	D	49	B	9	D			9	B	9	D
10	C	50	D	10	B			10	B	10	B
11	D	51	C	11	A			11	A	11	D
12	B	52	A	12	D			12	C	12	A
13	B			13	D			13	A	13	B
14	A			14	B			14	D	14	B
15	A			15	A			15	C	15	C
16	C			16	C			16	120	16	A
17	B			17	C			17	21	17	A
18	A			18	D			18	125/2	18	错题
19	C			19	B			19	2	19	错题
20	D			20	B			20	54	20	B
21	B			21	C					21	C
22	B			22	A					22	A
23	A			23	D					23	C
24	C			24	A					24	A
25	D			25	B					25	B
26	D			26	A					26	A
27	C			27	A					27	B
28	C			28	C					28	B
29	D			29	B					29	C
30	C			30	B					30	D
31	C			31	B					31	18
32	B			32	C					32	5
33	A			33	B					33	75
34	C			34	B					34	1275
35	B			35	D					35	15
36	C			36	D					36	9816
37	D			37	B					37	10
38	D			38	D					38	16
39	B			39	A						
40	A			40	D						