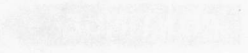


Chapter 5 Practice Test 2



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 excerpted from Miguel de Cervantes, *Don Quixote*, originally published in 1605 and translated by John Ormsby in 1885.

At this point they came in sight of thirty or forty windmills that are on that plain.

Line “Fortune,” said Don Quixote to his squire, as soon
as he had seen them, “is arranging matters for us better
5 than we could have hoped. Look there, friend Sancho
Panza, where thirty or more monstrous giants rise up,
all of whom I mean to engage in battle and slay, and
with whose spoils we shall begin to make our fortunes.
For this is righteous warfare, and it is God’s good
10 service to sweep so evil a breed from off the face of the
earth.”

“What giants?” said Sancho Panza.

“Those you see there,” answered his master,
“with the long arms, and some have them nearly two
15 leagues* long.”

“Look, your worship,” said Sancho. “What we see
there are not giants but windmills, and what seem to
be their arms are the vanes that turned by the wind
make the millstone go.”

20 “It is easy to see,” replied Don Quixote, “that you
are not used to this business of adventures. Those are
giants, and if you are afraid, away with you out of here
and betake yourself to prayer, while I engage them in
fierce and unequal combat.”

25 So saying, he gave the spur to his steed Rocinante,
heedless of the cries his squire Sancho sent after him,
warning him that most certainly they were windmills

and not giants he was going to attack. He, however, was
so positive they were giants that he neither heard the
30 cries of Sancho, nor perceived, near as he was, what
they were.

“Fly not, cowards and vile beings,” he shouted, “for
a single knight attacks you.”

A slight breeze at this moment sprang up, and the
35 great vanes began to move.

“Though ye flourish more arms than the giant
Briarus**, ye have to reckon with me!” exclaimed Don
Quixote, when he saw this.

So saying, he commended himself with all his
40 heart to his lady Dulcinea, imploring her to support
him in such a peril. With lance braced and covered by
his shield, he charged at Rocinante’s fullest gallop and
attacked the first mill that stood in front of him. But as
he drove his lance-point into the sail, the wind whirled
45 it around with such force that it shivered the lance
to pieces. It swept away with it horse and rider, and
they were sent rolling over the plain, in sad condition
indeed. Sancho hastened to his assistance as fast as his
ass could go, and when he came up found him unable
50 to move, with such a shock had Rocinante fallen with
him.

“God bless me!” said Sancho, “did I not tell your
worship to mind what you were about, for they were
only windmills? And no one could have made any
55 mistake about it but one who had mills of the same
kind in his head.”

CONTINUE 

60 “Hush, friend Sancho” replied Don Quixote, “the fortunes of war more than any other are liable to frequent fluctuations; and moreover I think, and it is the truth, that the same sage Friston*** who carried off my study and books, has turned these giants into mills in order to rob me of the glory of vanquishing them, such is the enmity he bears me; but in the end his wicked arts will avail but little against my good sword.”

* seven miles

** a hundred-armed giant from Greek mythology

*** the magician (El Sabio Frestón), an imaginary character who Quixote imagines as the thief of his books and the enchanter of the windmills

1

Which choice best summarizes the passage?

- A) An adventure goes awry when two young men decide to pretend they are in a great battle due to their longing for adventure.
- B) A great warrior and his faithful steed single-handedly vanquish an army of giants in a mystical tale.
- C) Two knights find themselves in an argument over what is really happening in their immediate surroundings.
- D) A knight with an altered perception of reality engages in what he believes to be a battle of good versus evil.

2

The main purpose of the opening sentence of the passage is to

- A) inform the reader of the true setting of the story for later plot purposes.
- B) elaborate on the importance of technological advances during the Middle Ages.
- C) describe the field on which a great battle is about to take place.
- D) provide detailed imagery to enhance the mood of the following story.

3

During the course of the first six paragraphs (lines 1–24), the main character’s focus shifts from

- A) recollection of past victories to the prospect of imminent defeat.
- B) reflection on the role of money in warfare to the role of God in battle.
- C) generalization of how to wage a successful battle to specific rules of combat.
- D) evaluation of an enemy before him to an argument with his faithful companion.

4

The phrase “sweep so evil a breed from off the face of the earth” at the end of the second paragraph mainly has which of the following effects?

- A) It establishes the story as a horror story that will primarily focus on the evil in the world.
- B) It informs the reader that Don Quixote is in fact a prophet who receives orders from God to go into battle.
- C) It indicates the grandiose view that Don Quixote has of the battle he is about to undertake.
- D) It demonstrates to the reader the dangers of taking religious fanaticism to the point of violence.

5

The passage indicates that Don Quixote would characterize his charge into battle as

- A) ridiculous.
- B) insane.
- C) unexceptional.
- D) brave.

CONTINUE 

6

The passage indicates that Sancho views Don Quixote as a

- A) boss who endangers his employees.
- B) superior who needs looking after.
- C) skillful leader to follow into battle.
- D) pious man who requires help.

7

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

- A) Lines 5–8 (“Look . . . fortunes”)
- B) Lines 20–21 (“It is . . . adventures”)
- C) Lines 25–28 (“So saying . . . attack”)
- D) Lines 41–43 (“With . . . him”)

8

The passage indicates that Don Quixote does not believe Sancho’s description of the “giants” (line 17) because

- A) Sancho’s eyesight is not as good as Don Quixote’s.
- B) Don Quixote claims Sancho is not as brave as he is when it comes to battle.
- C) Don Quixote knows more about Friston’s schemes than Sancho does.
- D) Don Quixote believes Sancho is too busy praying to pay attention.

9

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

- A) Lines 13–15 (“Those . . . long”)
- B) Lines 16–19 (“Look . . . go”)
- C) Lines 21–24 (“Those . . . combat”)
- D) Lines 32–33 (“Fly not . . . you”)

10

At the end of the passage, the reference to Friston mainly has the effect of

- A) giving the reader greater insight into how Don Quixote perceives reality.
- B) revealing the evil in the world that Don Quixote is fighting his battle against.
- C) explaining to the reader the detailed history of how Don Quixote came to see things.
- D) illustrating for the reader the evil that can come from personal misunderstandings.

CONTINUE 

Questions 11–20 are based on the following passage.

This passage is adapted from Susan B. Anthony's 1873 address to Post Office Districts of Monroe on women's suffrage.

Friends and Fellow-citizens: I stand before you tonight, under indictment for the alleged crime of having voted at the last Presidential election, without
 Line 5 evening to prove to you that in thus voting, I not only committed no crime, but, instead, simply exercised my *citizen's right*, guaranteed to me and all United States citizens by the National Constitution, beyond the power of any State to deny.

10 Our democratic-republican government is based on the idea of the natural right of every individual member thereof to a voice and a vote in making and executing the laws. We assert the province of government to be to secure the people in the
 15 enjoyment of their unalienable rights. We throw to the winds the old dogma that governments can give rights. Before governments were organized, no one denies that each individual possessed the right to protect his own life, liberty and property. And when 100 or
 20 1,000,000 people enter into a free government, they do not barter away their natural rights; they simply pledge themselves to protect each other in the enjoyment of them, through prescribed judicial and legislative tribunals. They agree to abandon the methods of brute
 25 force in the adjustment of their differences, and adopt those of civilization.

Nor can you find a word in any of the grand documents left us by the fathers that assumes for government the power to create or to confer rights.
 30 The Declaration of Independence, the United States Constitution, the constitutions of the several states and the organic laws of the territories, all alike propose to protect the people in the exercise of their God-given rights. Not one of them pretends to bestow rights.

35 "All men are created equal, and endowed by their Creator with certain unalienable rights. Among these are life, liberty and the pursuit of happiness. That to secure these, governments are instituted among men, deriving their just powers from the consent of the
 40 governed."

Here is no shadow of government authority over rights, nor exclusion of any from their full and equal enjoyment. Here is pronounced the right of all men, and "consequently," as the Quaker preacher said, "of
 45 all women," to a voice in the government. And here,

in this very first paragraph of the declaration, is the assertion of the natural right of all to the ballot; for, how can "the consent of the governed" be given, if the right to vote be denied. Again:

50 "That whenever any form of government becomes destructive of these ends, it is the right of the people to alter or abolish it, and to institute a new government, laying its foundations on such principles, and organizing its powers in such forms as to them shall
 55 seem most likely to effect their safety and happiness."

Surely, the right of the whole people to vote is here clearly implied. For however destructive in their happiness this government might become, a disfranchised class could neither alter nor abolish it,
 60 nor institute a new one, except by the old brute force method of insurrection and rebellion. One-half of the people of this nation today are utterly powerless to blot from the statute books an unjust law, or to write there a new and a just one. The women, dissatisfied as
 65 they are with this form of government, that enforces taxation without representation,—that compels them to obey laws to which they have never given their consent,—that imprisons and hangs them without a trial by a jury of their peers, that robs them, in
 70 marriage, of the custody of their own persons, wages and children,—are this half of the people left wholly at the mercy of the other half, in direct violation of the spirit and letter of the declarations of the framers of this government, every one of which was based
 75 on the immutable principle of equal rights to all. By those declarations, kings, priests, popes, aristocrats, were all alike dethroned, and placed on a common level politically, with the lowliest born subject or serf. By them, too, men, as such, were deprived of their
 80 divine right to rule, and placed on a political level with women. By the practice of those declarations all class and caste distinction will be abolished; and slave, serf, plebeian, wife, woman, all alike, bound from their subject position to the proud platform of equality.

CONTINUE 

11

The central problem that Anthony explains in the passage is that women have been

- A) prevented from voting, which is a violation of their human rights.
- B) prevented from participating in Congress, which has led to the creation of unjust laws.
- C) too kind and just, while men are cruel and unfair.
- D) denied equal access to schools, which has prevented them from attending college.

12

Anthony uses the phrase “grand documents” (lines 27–28) mainly to refer to the

- A) paper the Declaration of Independence was written on.
- B) letters from a grand jury.
- C) President’s personal notes.
- D) important legislation the country was founded on.

13

Anthony claims that which of the following was a purpose of the Declaration of Independence?

- A) The protection of human rights
- B) The bestowal of human rights
- C) The creation of human rights
- D) The prevention of violence

14

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

- A) Lines 4–9 (“It shall . . . deny”)
- B) Lines 27–29 (“Nor can . . . rights”)
- C) Lines 30–34 (“The Declaration . . . rights”)
- D) Lines 56–57 (“Surely . . . implied”)

15

As used in line 33, “the exercise” most nearly refers to

- A) an activity.
- B) a workout.
- C) a use or application.
- D) a process.

16

It can be reasonably inferred that “natural right” (line 47) was a term generally intended to

- A) describe the right of men and women to vote.
- B) criticize the right of women to run for office.
- C) advocate for the right to bear arms.
- D) introduce the origin of the Fifth Amendment.

17

As used in line 59, “class” most nearly means

- A) subject.
- B) group.
- C) genus.
- D) stylish.

18

The situation Anthony describes in the passage suggests that the U.S. government has

- A) established laws denying women’s suffrage.
- B) denied participating in an unjust system.
- C) considered women superior to men.
- D) dethroned kings for political equality.



19

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

- A) Lines 1–4 (“*Friends . . . vote*”)
- B) Lines 35–40 (“*All men . . . governed*”)
- C) Lines 50–55 (“*That . . . happiness*”)
- D) Lines 75–78 (“*By those . . . serf*”)

20

Lines 61–75 of the seventh paragraph are primarily concerned with establishing a contrast between

- A) those with power and those without.
- B) poor men and rich men.
- C) social customs and religious customs.
- D) laws and guidelines.

CONTINUE 

Questions 21–30 are based on the following passage and supplementary material.

This passage is adapted from the U.S. Geological Survey, "Ground Water." ©1999 by the U.S. Department of the Interior.

Although there are sizable areas where ground water is being withdrawn at rates that cause water levels to decline persistently, as in parts of the dry Southwest, this is not true throughout the country. For the Nation as a whole, there is neither a pronounced downward nor upward trend. Water levels rise in wet periods and decline in dry periods. In areas where water is not pumped from aquifers in excess of the amount of recharge to the aquifer—particularly in the humid central and eastern parts of the country—water levels average about the same as they did in the early part of the twentieth century.

A major responsibility of the U.S. Geological Survey is to assess the quantity and quality of the Nation's water supplies. The Geological Survey, in cooperation with other Federal, State, and local agencies, maintains a nationwide hydrologic-data network, carries out a wide variety of water-resources investigations, and develops new methodologies for studying water. The results of these investigations are indispensable tools for those involved in water-resources planning and management. Numerous inquiries concerning water resources and hydrology are directed to the Survey and to State water-resources and geological agencies.

To locate ground water accurately and to determine the depth, quantity, and quality of the water, several techniques must be used, and a target area must be thoroughly tested and studied to identify hydrologic and geologic features important to the planning and management of the resource. The landscape may offer clues to the hydrologist about the occurrence of shallow ground water. Conditions for large quantities of shallow ground water are more favorable under valleys than under hills.

Rocks are the most valuable clues of all. As a first step in locating favorable conditions for ground-water development, the hydrologist prepares geologic maps and cross sections showing the distribution and positions of the different kinds of rocks, both on the surface and underground. Some sedimentary rocks may extend many miles as aquifers of fairly uniform permeability. Other types of rocks may be cracked and broken and contain openings large enough to carry water. Types and orientation of joints or other fractures

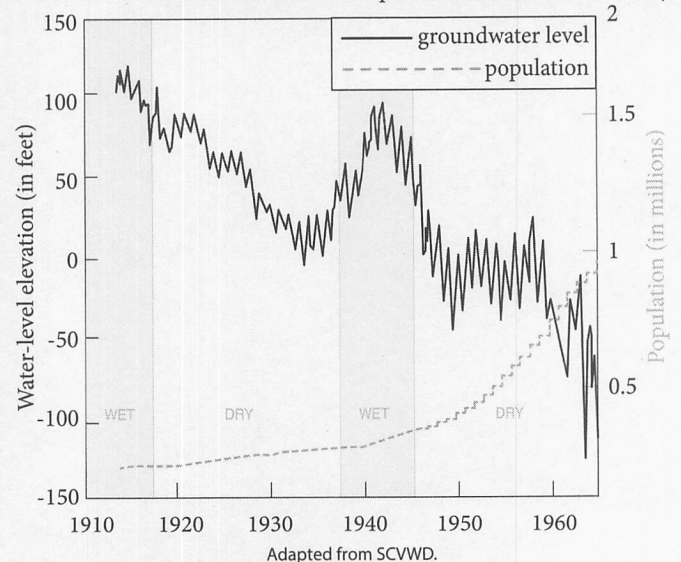
may be clues to obtaining useful amounts of ground water. Some rocks may be so folded and displaced that it is difficult to trace them underground.

Next, a hydrologist obtains information on the wells in the target area. The locations, depth to water, amount of water pumped, and types of rocks penetrated by wells also provide information on ground water. Wells are tested to determine the amount of water moving through the aquifer, the volume of water that can enter a well, and the effects of pumping on water levels in the area. Chemical analysis of water from wells provides information on quality of water in the aquifer.

Evaluating the ground-water resource in developed areas, prudent management of the resource, and protection of its quality are current ground-water problems. Thus, prediction of the capacity of the ground-water resource for long-term pumpage, the effects of that pumpage, and evaluation of water-quality conditions are among the principal aims of modern-day hydrologic practice in achieving proper management of ground water.

Ground water, presently a major source of water, is also the Nation's principal reserve of fresh water. The public will have to make decisions regarding water supply and waste disposal-decisions that will either affect the ground-water resource or be affected by it. These decisions will be more judicious and reliable if they are based upon knowledge of the principles of ground-water occurrence

Historical Groundwater Levels and Population for Santa Clara Valley



CONTINUE

21

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

- A) style.
- B) result.
- C) tendency.
- D) preference.

22

Based on information in the passage, it can reasonably be inferred that ground water occurrence

- A) is produced only by the flow of rain water through permeable rock in a valley.
- B) could be located by proximity to landscape features such as hills and existing wells.
- C) might be relatively constant across large landscapes but is affected by seasonal variables.
- D) achieves roughly the same depth regardless of the occurrence and persistence of surface water.

23

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

- A) Lines 6–12 (“Water . . . century”)
- B) Lines 26–31 (“To locate . . . resource”)
- C) Lines 31–35 (“The landscape . . . hills”)
- D) Lines 36–41 (“As a . . . underground”)

24

According to the Geological Survey, the capability to assess the nation’s water supplies is significant primarily because

- A) the study of such supplies will provide information critical to water-resource administration.
- B) the study of water supplies will allow agencies to increase the efficiency of crop irrigation.
- C) it will enable researchers to develop improved methods of chemical analysis.
- D) it will enable scientists to verify the maximum depth of rock layers.

25

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

- A) Lines 1–4 (“Although . . . country”)
- B) Lines 20–22 (“The results . . . management”)
- C) Lines 41–43 (“Some . . . permeability”)
- D) Lines 56–58 (“Chemical . . . aquifer”)

26

The third paragraph (lines 26–35) serves mainly to

- A) propose a subject for future research.
- B) introduce a process for finding a natural resource.
- C) describe a recent discovery and suggest its implications.
- D) relate the sequence of a series of events.

27

As used in line 75, “occurrence” most nearly means

- A) plan.
- B) happening.
- C) event.
- D) presence.



28

In the graph, the maximum water-level elevation in feet is closest to

- A) 125.
- B) 1.75.
- C) 0.75.
- D) -25.

29

Which concept is supported by the passage and by the information in the figure?

- A) Groundwater levels tend to decrease during drier years and increase during wetter years on average.
- B) The amount of water pumped from aquifers may have an impact on groundwater levels.
- C) Humid regions tend to experience smaller average declines in groundwater levels than do drier regions.
- D) Recharge to aquifers and water pumped from aquifers may balance one another in the long run.

30

How does the figure support the author's point that the public may impact and be impacted by groundwater levels?

- A) It provides evidence that waste disposal decisions affect the water supply.
- B) It shows a relationship between increasing population and decreasing groundwater level.
- C) It highlights the extent to which rapid population growth affects water quality.
- D) It suggests a correlation between human-made landscape changes and availability of shallow groundwater.

CONTINUE 

Questions 31–41 are based on the following passage and supplementary material.

This passage is adapted from Chester Lloyd Jones, "Bananas and Diplomacy." ©1913 by *The North American Review*.

To those in world-trade, names of countries and regions suggest their products. It has always been so. The East Indies four hundred years ago meant spice; two hundred years ago China meant silks and tea; Canada meant fur. The Caribbean to Queen Elizabeth meant gold—it was the route of the treasure ships of Spain—to Washington it meant sugar and molasses, and to our children it will mean bananas.

The Panama Canal has so occupied our attention for the last decade that we have overlooked a significant economic change taking place independently of the forces which promise so radically to change the transportation routes of world commerce. Economists tell us that the trend of Caribbean diplomacy will be determined by the banana crop. At the beginning of the twentieth century, there are food products that will exercise an influence upon international politics unconnected with the Panama Canal and of an importance which can be measured only in prophesy.

The market for bananas in the United States was developed largely through the efforts of one man. Forty years ago, Captain L. D. Baker was engaged in trade between the Orinoco River and Boston. On one trip he called at Port Morant, Jamaica, for a cargo of bamboo for paper-making and carried back a few bunches of bananas, then a curiosity in the New England markets. The venture proved profitable and the captain thereafter made several trips a year to Port Antonio, Jamaica, to take cargoes of bananas to Boston.

How important the trade has become is illustrated by the figures of exports. In 1911 there were sent from Caribbean countries in the export trade 52,936,963 bunches, which, on the average of 140 bananas to the bunch, represents a total of over 7,400,000,000 bananas. In 1912 the continental United States alone consumed 44,520,539 bunches, or over sixty bananas for each man, woman, and child. Two facts appear from the following figures: with the exception of the Canary Islands, all the countries producing large quantities of bananas for export border the Caribbean, and the United States consumes 85 percent of all bananas exported—five times as much as all the rest of the world.

Banana Supply of the United States 1912

Jamaica	15,467,918
Honduras	7,151,178
Costa Rica	7,053,664
Panama	4,581,500
Cuba.....	2,478,581
Nicaragua	2,270,100
Guatemala	2,017,650
Colombia.....	1,542,988
Mexico.....	817,006
British Honduras.....	557,160
Dominican Republic.....	304,000
Dutch Guiana	261,548
Others	17,246
Total.....	44,520,539

The world supply in 1911 as shown by the same records was:

<i>Country of Origin</i>	<i>Quantity (Bunches)</i>
Dominican Republic.....	404,000
Mexico (Frontera Province)	750,000
Honduras	6,500,000
Costa Rica	9,309,586
Jamaica	16,497,385
Colombia.....	4,901,894
Panama.....	4,261,500
Canary Islands.....	2,648,378
Cuba.....	2,500,000
Nicaragua	2,225,000
Guatemala	1,755,704
British Honduras.....	525,000
Dutch Guiana	387,516
Others	250,000
Total.....	52,915,963

The business, especially when the fruit must be sent long distances, demands organization for collecting fruit from small planters and large capital for steamers with refrigerating appliances. In fact, reliance on private planters has proven unsatisfactory and the big banana-marketing companies now own extensive plantations throughout the West Indies and on the mainland.

CONTINUE 

The increased production of the banana in its natural state and the diversification of its uses promise to introduce a new and hitherto neglected factor in our food supply. If present development continues, it will raise the Caribbean region from its dependence on foreign markets for food to one of the regions from which an important part of the world's food-supply will be drawn. The wheat fields of the Dakotas and Manitoba will meet as one of their competitors in feeding the world the banana plantations of the American Mediterranean.

These figures show that the world is just awakening to the value of the banana as food. If the present development continues, the acreage devoted to banana-growing must rapidly increase. Improved refrigeration and quick steam service will continue to widen the area in which the product can be marketed. The development of the banana-flour industry also promises to open a market for the product of areas too distant to profit by the demand of fresh fruit, just as the perfection of the manufacture of copra, the dried meat of the coconut, has opened up a new industry reaching to the farthest islands of the Pacific.

Great as the blessings of the Panama Canal will be to the trade of the world and to that of the United States in particular, we must not let the new markets which it will develop beyond the Isthmus make us forget that region so rich in possibilities which lies this side of the continental divide and so much nearer our own markets. Friendship with our near neighbors is no less important than the good will of people over wide seas. One of the most important, and from our past experience let us remember, one of the most delicate problems with which our men of state have to deal is the diplomacy of the Caribbean.

31

The main purpose of the passage is to

- A) examine the impact of an export on the global economy.
- B) posit that bananas will become the new gold standard.
- C) consider a dilemma brought about by global economics.
- D) argue that international politics bars the Caribbean from gaining financial independence.

32

The main purpose of the second paragraph (lines 9–19) is to

- A) illustrate how exports will skyrocket with the completion of the Panama Canal.
- B) introduce an idea not widely associated with a familiar region.
- C) prove that bananas will dominate the economy of the twentieth century.
- D) provide support that economists correctly prophesy that the Panama Canal will radically change world commerce.

33

As used in line 17, “exercise” most nearly means

- A) operate.
- B) exert.
- C) train.
- D) maneuver.

34

Which choice best supports the author’s claim that bananas are likely to play a significant role in the global economy?

- A) Lines 1–5 (“To those . . . fur”)
- B) Lines 13–15 (“Economists . . . crop”)
- C) Lines 42–44 (“United . . . world”)
- D) Lines 60–63 (“The wheat . . . Mediterranean”)

35

As used in line 82, “friendship” most nearly means

- A) affection.
- B) fondness.
- C) collusion.
- D) cooperation.



36

The main idea of the final paragraph (lines 76–87) is that

- A) friendship is important and often overlooked in the global economy.
- B) the Panama Canal has proven to be a great blessing in international trade.
- C) new markets will emerge beyond the Isthmus, calling for change in the global economy.
- D) the Caribbean may prove to be an important component of the global economy in coming decades.

37

In the passage, the author anticipates which of the following potential difficulties for the banana industry?

- A) Transporting bananas large distances requires certain technology to be successful.
- B) Steamers are the best way to transport large quantities of bananas.
- C) Banana flour is produced in areas too distant to be reached.
- D) The banana industry will be surpassed by copra exports.

38

Which choice provides the best evidence for the previous question?

- A) Lines 15–19 (“At the . . . prophesy”)
- B) Lines 45–48 (“The business . . . appliances”)
- C) Lines 48–52 (“In fact . . . mainland”)
- D) Lines 70–75 (“The development . . . Pacific”)

39

Data in the tables provide most direct support for which idea in the passage?

- A) Although it is a major banana importer, the United States is not the only nation that imports bananas.
- B) The increased production of the banana is the beginning of an economic revolution in the Caribbean.
- C) Acreage toward banana-growing must increase to accommodate increased production.
- D) The export numbers in the tables show an upward trend in banana consumption.

40

Data in the tables indicate that the difference between the number of bananas supplied to the U.S. in 1912 and the number of bananas supplied to the world in 1911 was greatest for which country?

- A) Honduras
- B) Panama
- C) Jamaica
- D) Nicaragua

41

Data in the table of the world supply in 1911 most strongly support which of the following statements?

- A) Panama and Colombia combined supplied more bananas than did Jamaica in 1911.
- B) The profits earned from bananas did not fluctuate.
- C) Dutch Guiana produced the fewest bananas in 1911.
- D) Colombia exported more bananas in 1911 than did Cuba.


 CONTINUE

Questions 42–52 are based on the following passages.

Passage 1 is adapted from Bret Stetka, “Where’s the Proof That Mindfulness Meditation Works?” ©2017 by Scientific American. Passage 2 is adapted from Matthieu Ricard, Antoine Lutz, and Richard J. Davidson, “Neuroscience Reveals the Secrets of Meditation’s Benefits.” ©2014 by Scientific American.

Passage 1

Line Research in recent decades has linked mindfulness
practices to a staggering collection of possible health
benefits. Yet many psychologists, neuroscientists and
meditation experts are afraid that hype is outpacing
5 the science. In an article released in *Perspectives on
Psychological Science*, 15 prominent psychologists
and cognitive scientists caution that despite its
popularity and supposed benefits, scientific data on
mindfulness are woefully lacking. Many of the studies
10 on mindfulness and meditation, the authors wrote,
are poorly designed—compromised by inconsistent
definitions of what mindfulness actually is, and often
void of a control group to rule out the placebo effect.

The new paper cites a 2015 review published in
15 *American Psychologist* reporting that only around
9 percent of research into mindfulness-based
interventions has been tested in clinical trials that
included a control group. The authors also point
to multiple large placebo-controlled meta-analyses
20 concluding that mindfulness practices have often
produced unimpressive results. A 2014 review of 47
meditation trials, collectively including over 3,500
participants, found essentially no evidence for benefits
related to enhancing attention, curtailing substance
25 abuse, aiding sleep or controlling weight.

Lead author of the report Nicholas Van Dam,
a clinical psychologist and research fellow in
psychological sciences at the University of Melbourne,
contends potential benefits of mindfulness are being
30 overshadowed by hyperbole and oversold for financial
gain. Mindfulness meditation and training is now a
\$1.1-billion industry in the U.S. alone. “Our report
does not mean that mindfulness meditation is not
helpful for some things,” Van Dam says. “But the
35 scientific rigor just isn’t there yet to be making these
big claims.”

Van Dam acknowledges that some good evidence
does support mindfulness. The 2014 analysis found
meditation and mindfulness may provide modest

40 benefits in anxiety, depression and pain. He also cites
a 2013 review published in *Clinical Psychology
Review* for mindfulness-based therapy that found
similar results.

Behavioral and social sciences professor and
45 director of Brown University’s Mindfulness Center
Eric Loucks, agrees there are multiple definitions of
mindfulness. But it is the trickiness in bringing a rich
spiritual concept into a standardized framework for
testing and advising patients that he feels might be
50 tough to tackle.

“One element in defining mindfulness, if
considering its roots in Buddhism, is...the Buddha’s
recommendation that descriptions of concepts like
‘mindfulness’ are like a finger pointing at the moon,”
55 he explains. “It is important not to confuse the finger
for the moon. There will always be variations in
people’s understanding of mindfulness. It is a
personal experience.”

Passage 2

The goals of meditation overlap with many of the
60 objectives of clinical psychology, psychiatry, preventive
medicine and education. As suggested by the growing
compendium of research, meditation may be effective
in treating depression and chronic pain and in
cultivating a sense of overall well-being.

65 Staying aware of an unpleasant sensation can
reduce maladaptive emotional responses and help
one to move beyond the disagreeable feeling and
may be particularly useful in dealing with pain. In
our Wisconsin lab, we have studied experienced
70 practitioners while they performed an advanced form
of mindfulness meditation called open presence. In
open presence, sometimes called pure awareness, the
mind is calm and relaxed, not focused on anything
in particular yet vividly clear, free from excitation
75 or dullness. The meditator observes and is open to
experience without making any attempt to interpret,
change, reject or ignore painful sensation. We found
that the intensity of the pain was not reduced in
meditators, but it bothered them less than it did
80 members of a control group.

Several studies have documented the benefits of
mindfulness on symptoms of anxiety and depression
and its ability to improve sleep patterns. By deliberately

CONTINUE 

monitoring and observing their thoughts and emotions
 85 when they feel sad or worried, depressed patients
 can use meditation to manage negative thoughts and
 feelings as they arise spontaneously and so lessen
 rumination. In 2000 clinical psychologists John
 Teasdale, then at the University of Cambridge, and
 90 Zindel Segal of the University of Toronto showed that
 for patients who had previously suffered at least three
 episodes of depression, six months of mindfulness
 practice, along with cognitive therapy, reduced the risk
 of relapse by nearly 40 percent in the year following
 95 the onset of a severe depression. More recently, Segal
 demonstrated that the intervention is superior to a
 placebo and has a protective effect against relapse
 comparable to standard maintenance antidepressant
 therapy.

42

As used in line 11, “compromised” most nearly means

- A) accommodated.
- B) shaped.
- C) divided.
- D) undermined.

43

According to the author of Passage 1, what do aiding
 sleep and controlling weight have in common?

- A) Neither has been convincingly linked to meditation.
- B) Neither is a potential benefit of mindfulness practices.
- C) They are challenging health goals to achieve.
- D) They are well understood by medical researchers.

44

The author of Passage 1 indicates that the positive
 effects of meditation practice are currently

- A) increasing practitioners’ productivity.
- B) benefitting growing numbers of people.
- C) exaggerated for the sake of profit.
- D) not worth the cost of research.

45

The analogy in the final paragraph of Passage 1 has
 primarily which effect?

- A) It illustrates a challenge involved in applying a particular concept.
- B) It uses elegant imagery to mask a theory’s shortcomings.
- C) It refers to nature to lend a sense of credibility.
- D) It applies familiar language to simplify a technical procedure.

46

The author of Passage 2 indicates which of the
 following about the use of mindfulness meditation
 practice?

- A) It should generally be discouraged.
- B) It reduces practitioners’ impulsive behaviors.
- C) It should be researched further.
- D) It does not affect pain sensation directly.



47

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

- A) Lines 68–71 (“In our . . . presence”)
- B) Lines 77–79 (“We found . . . meditators”)
- C) Lines 81–83 (“Several . . . patterns”)
- D) Lines 95–99 (“More . . . therapy”)

48

The author of Passage 2 refers to “open presence” to suggest that disagreeable sensation may be less troublesome to those who

- A) can take their minds off their discomfort.
- B) understand the source of their emotions.
- C) remain aware of the sensation without judging the experience.
- D) seek treatment for their pain.

49

The main purpose of each passage is to

- A) provide an evaluation of the potential health benefits of mindfulness practices based on research.
- B) make a case for revising standard approaches to researching psychology and daily habits.
- C) present findings on the attention spans of people with varying amounts of mindfulness training.
- D) contrast anxiety levels of those who meditate for spiritual reasons with those who meditate for health benefits.

50

Which choice best describes the relationship between the two passages?

- A) Passage 2 provides anecdotal evidence that coincides with experimental evidence given in Passage 1.
- B) Passage 2 examines in detail one of the topics which Passage 1 explores more broadly.
- C) Passage 2 cites research supporting claims that are questioned in Passage 1.
- D) Passage 2 suggests an alternative explanation for the results discussed in Passage 1.

51

On which of the following points would the authors of both passages most likely agree?

- A) Meditators tend to sleep more soundly than those who do not meditate.
- B) Those who practice meditation for spiritual reasons are unlikely to participate in research trials.
- C) Mindfulness meditation and training attract interest because they are profitable fields.
- D) Including a control group in research can yield important evidence about potential treatments.

52

Which choice provides the best evidence that the author of Passage 1 would agree to some extent with the claim made in lines 61–64, Passage 2?

- A) Lines 1–3 (“Research . . . benefits”)
- B) Lines 3–5 (“Yet many . . . science”)
- C) Lines 38–40 (“The 2014 . . . pain”)
- D) Lines 47–50 (“But it . . . tackle”)

STOP

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

Writing and Language Test

35 MINUTES 48 QUESTIONS

Write or type your answer in the space provided for each question.

ANSWERS

The passage below is a conversation between two people. Read the passage and answer the questions that follow. You will have 10 minutes to complete the questions. The questions are based on the passage and are designed to assess your ability to understand and analyze the text.

No Test Material On This Page

After reading each page, you should be able to identify the main idea and supporting details. You should also be able to identify the author's purpose and the audience. The questions are designed to assess your ability to understand and analyze the text.

Exercise 1-11 is based on the following passage. The passage is a conversation between two people. Read the passage and answer the questions that follow. You will have 10 minutes to complete the questions. The questions are based on the passage and are designed to assess your ability to understand and analyze the text.

ANSWERS

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.

Streaming Something Beyond Hard Work

There is no question that the American workforce has changed, regardless of whether one believes it has changed for better or worse. In the 1940s, the United States led the world in most economic categories, and its businesses were some of the most praised in the world. By the 1980s, however, the dominance of the United States had been challenged by industries the world over, and the economy was measured in terms of global effects rather than national ones.

This **1** growing and enlarging competition has unfortunately led to a loosening of companies' responsibilities toward their employees. Retirement

1

- A) NO CHANGE
- B) increased competition
- C) increased competing among countries
- D) larger spirit of competitiveness for all

CONTINUE 

pensions are largely a thing of the past. **2** Moreover, whereas someone born in the 1940s might have expected to spend his or her entire career with a single company. Many of whom now swap through four or five “careers” throughout a single working life.

This trend has intensified recently, particularly in

3 Silicon Valley startups. One of the major success

2

Which choice most effectively combines the underlined sentences?

- A) Moreover, whereas someone born in the 1940s might have expected to spend his or her entire career with a single company; many workers now swap through four or five “careers” throughout a single working life over the course of it.
- B) Swapping jobs is, moreover for instance, a thing that new workers do now, whereas those in the 1940s would have been more likely to work for a single company for their entire careers.
- C) Moreover, whereas someone born in the 1940s might have expected to spend his or her entire career with a single company; many workers now swap through four or five “careers” throughout a single working life.
- D) Moreover, whereas someone born in the 1940s might have expected to spend his or her entire career with a single company, now the norm has workers swapping through four or five “careers” throughout a single working life.

3

At this point, the author is considering adding the following information.

the fast-paced, forward-thinking, occasionally ruthless world of

Should the writer make the addition here?

- A) Yes, because it shows the author’s ability in finding apt adjectives.
- B) Yes, because it creates a richer description of the company discussed in the essay.
- C) No, because it lengthens the sentence unnecessarily with information that is given elsewhere.
- D) No, because it is not the kind of thing that would be acceptable to say in the workplace.

CONTINUE 

stories from among these many-sided companies **4** that is Netflix, the streaming and DVD-mailing giant, which may have been singlehandedly responsible for ending the lifespans of both the video store and the DVD in only a few short years. Netflix's compulsively innovative methods have changed the way that those living in the United States and in many other parts of the globe interact with visual media, especially in movie theaters, on home entertainment systems, and on **5** computers.

6 For all this, Netflix has become famous (or infamous) for changing its employees' relationship to the workplace. Netflix's staff is relatively lean, and employees are incredibly well-treated. Their salaries are higher than those of other Silicon Valley businesses, and the employees are given *unlimited* (yes, you read that correctly) vacation time. Furthermore, as Netflix continues to push beyond the traditional boundaries of film and TV, the company affords its employees the opportunity to be on the cutting edge of change.

4

- A) NO CHANGE
- B) that are
- C) is
- D) are

5

- A) NO CHANGE
- B) machines used for computing.
- C) PCs and Macs with the capacity to stream.
- D) intelligent machines.

6

- A) NO CHANGE
- B) Regardless,
- C) Thus,
- D) Furthermore,


 CONTINUE

All of Netflix's success comes at a price, however.

7 Just putting seriously all of it right out there, employees at Netflix are warned not to think of the job as one that they will keep "for life." Netflix is not concerned with traditional ideas of "hard work": 8 to come to work on time, staying late, and showing loyalty to the company. Instead, Netflix is concerned only with *results*. Just ask the computer programmers who started Netflix's streaming service and then were let go when the service became so successful that Netflix had to use Amazon.com's servers instead. While these employees had done about as good a job as they could do, 9 yet they were fired the moment they were no longer needed.

Indeed, as companies continue to tighten their belts and their responsibility to be profitable remains, they will demand more of their employees and withdraw some of the comfortable 10 premising that the employees of earlier eras relied on. 11 This may be the workplace of the future, and we can only hope that employees will adapt as well as they have to past changes.

7

Which choice most effectively sets up the idea given in the second part of this sentence?

- A) NO CHANGE
- B) Turned off by the company's rudeness,
- C) Having no idea what they're walking into,
- D) From the first day on the job,

8

- A) NO CHANGE
- B) coming
- C) come
- D) workers coming

9

- A) NO CHANGE
- B) and
- C) because
- D) DELETE the underlined portion.

10

- A) NO CHANGE
- B) premise
- C) promises
- D) promising

11

Which statement most clearly ends the passage with a restatement of the writer's primary claim?

- A) NO CHANGE
- B) This is the end of employment as we know it, and we should all head for the hills.
- C) You can try to get a job at Netflix, but they're not really hiring all that often.
- D) If you've ever been fired or laid off from a job, you know how difficult it can be.

CONTINUE 

Questions 12–22 are based on the following passage.

Television—Not So Bad After All?

— 1 —

A mere ten years ago, surveys recorded data that showed the average American viewer to watch four hours of television a day. Television was a central part of the American household. Now that the Internet has come to supplant television’s central role in American culture (as people spend more time watching short videos on TikTok, reading short posts on Facebook and Twitter, and **12** they send quirky photos and videos on Snapchat), the complaints that had always been made about television can seem rather quaint. Those who critiqued television as a dangerous influence on society have since changed to new and, as they would see it, worse targets on the **13** web and are not much interested in television anymore.

— 2 —

Television certainly had its harmful effects on those who watched it for those four hours a day. There could be no “couch potatoes” without TVs, and the scourge of reality TV would never have been thrust upon the American viewing public. **14** As aforementioned, shining light in your eyes for many hours at a time can wreak havoc on one of **15** your most important senses: vision.

12

Which choice most closely matches the stylistic pattern established earlier in the sentence?

- A) NO CHANGE
- B) the sending of quirky photos and videos features prominently on Snapchat),
- C) sending quirky photos and videos on Snapchat),
- D) they send quirky photos on Snapchat and videos),

13

- A) NO CHANGE
- B) web,
- C) web, they
- D) web, the images on the Internet

14

- A) NO CHANGE
- B) However,
- C) That said,
- D) Moreover,

15

- A) NO CHANGE
- B) you’re most important senses,
- C) you’re most important senses;
- D) your most important senses;

CONTINUE 

— 3 —

However, television accomplished some incredible things as well. Drawing on the networks that **16** radio creates throughout the entire country, television provided something truly national for the first time. In 1964, over 70 million people, or a third of the United States population at the time, watched The Beatles make their American debut on *The Ed Sullivan Show*. **17** While young people were already fawning over the rock band, the televised performance fueled the subsequent “Beatlemania” that brought together Americans of all ages during a time of major social anxieties.

— 4 —

A large component of this “big world” was the presence of non-white faces. **18** Especially African Americans, non-white people, who parroted and parodied the patterns of Black speech, were represented on the radio by white actors. While African Americans were the most frequently targeted group, Asian Americans and those of all ethnicities were similarly lampooned in the national media. The popularity of television actually ended up forcing these media into a kind of progressivism: the

16

- A) NO CHANGE
- B) radio created
- C) radios’ create
- D) radio’s creation

17

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

The Beatles had many hits, including “She Loves You” and “I Wanna Hold Your Hand,” that continue to influence the course of rock and roll to the present day.

Should the writer make this addition here?

- A) Yes, because it helps to explain why the music of The Beatles can help to prevent crime.
- B) Yes, because it gives the reader additional context that helps to explain the importance of television.
- C) No, because it suggests that television’s only function was to broadcast musical performances.
- D) No, because it adds a detail that is irrelevant to the paragraph’s main focus.

18

- A) NO CHANGE
- B) For many years, non-white people, especially African Americans, were represented on the radio by white actors, who parroted and parodied the patterns of Black speech.
- C) African Americans were non-white people especially who for many years parroted by white actors and parodied in speech patterns.
- D) White actors parroted especially African Americans from non-white actors in their patterns of Black speech, which were parodied for many years.



Chinese American character on *Have Gun Will Travel*

19 and some of the other shows set in the old West would no longer work as racial masquerades. As a result, some of the earliest leading roles for non-white actors and actresses came on television, earlier than in film and theater in many cases.

— 5 —

Television may not play the central role in American culture that it once did, but many of the things that it achieved, both good and bad, remain in the culture today.

— 6 —

This national reach could occasionally lead to conformity and sensationalism, but it also showed **20** many in the American public, just how diverse the American scene had become. People still had to have a certain amount of wealth to travel physically outside of their **21** hometowns. They were usually filled with citizens who had the same basic backgrounds and attitudes. Television could show them just how big the world outside was.

Question 22 asks about the previous passage as a whole.

19

Which choice gives a second supporting example that is most similar to the example already in the sentence?

- A) NO CHANGE
- B) who was played by Ben Wright on the radio show
- C) and even some of the shows that weren't so popular on radio
- D) or the African American character on *The Beulah Show*

20

- A) NO CHANGE
- B) many, in the American public
- C) many in the American public
- D) many, in the American public,

21

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

- A) hometowns: they
- B) hometowns, and theirs
- C) hometowns with what
- D) hometowns, which

Think about the previous passage as a whole as you answer question 22.

22

To make the passage most logical, paragraph 6 should be placed

- A) where it is now.
- B) before paragraph 2.
- C) before paragraph 3.
- D) before paragraph 4.

CONTINUE 

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

The Noise Is Not for the Birds

Even if you love the vibrant life of the city, there are probably times when you crave silence. Even the busiest lives need some calm once in a while for some of life's basic, private tasks. In fact, this doesn't only describe human lives. While untouched nature is usually prized for the way it *looks*—**23** there greenery, scurrying animals, and placidity—nature is actually just as much characterized by the way it *sounds*.

24 Thus, when we build highways through thriving natural habitats, we don't just change the way they look.

25 You've certainly been somewhere remote enough that there aren't any cars around, or you've been woken up some morning by the sound of a car horn or a revving engine. Although the sound of the car is the sound of our day-to-day life, that does not change the fact that car traffic is remarkably loud.

23

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

24

- A) NO CHANGE
- B) Thence,
- C) Whereas,
- D) This being so,

25

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

We also change the way they sound.

Should the writer make this addition here?

- A) Yes, because it reminds the reader of the beauty of birds' songs.
- B) Yes, because it completes the idea started in the previous sentence.
- C) No, because it shifts the emphasis of the paragraph to sound rather than sight.
- D) No, because it disagrees with the thesis developed in the paragraph as a whole.

CONTINUE 

Furthermore, while we have become relatively **26** weakened to the sounds of cars on our “quiet” residential streets, not all animals have. A recent study checked the effect of **27** raising the highway volume on local bird populations. This might seem like an easy study with all the new highway construction going on in the United States all the time, but the researchers **28** at the Intermountain Bird Observatory in Idaho and wanted to study the effects without becoming part of the problem. Instead of building new roads, the researchers opted to produce the *sound* of roads, creating a fake, **29** or, a “phantom,” road with 15 pairs of speakers playing the sounds of traffic noise.

26

- A) NO CHANGE
- B) inured
- C) hip
- D) keen

27

- A) NO CHANGE
- B) the noise being more on highways
- C) increased highway noise
- D) highways exhibiting more noise levels

28

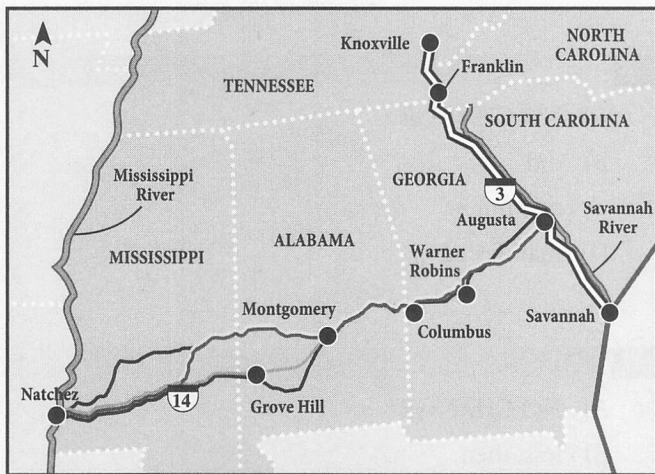
- A) NO CHANGE
- B) who work at the Intermountain Bird Observatory in Idaho, where they wanted to
- C) at the Intermountain Bird Observatory in Idaho wanted to
- D) at the Intermountain Bird Observatory in Idaho, they wanted to

29

- A) NO CHANGE
- B) or a “phantom,” road
- C) or a “phantom”; road
- D) or a “phantom” road,

CONTINUE 

[1] The results were telling. [2] According to the study, the mere *sounds* of **30** traffic, “reduced avian populations by a third and cut species diversity by a significant amount. [3] Birds, it seems, need to spend as much time as possible with their heads down—hunting and pecking, feeding their young, and fattening up for their various migrations. [4] This is bad news for avian life in the deep South, where the Interstate Highway Commission **31** has announced plans to eradicate avian and other wildlife populations between Natchez, Augusta, Savannah, and Knoxville. **32**



Proposed Interstate Routes

While this study will, the scientists hope, discourage new road construction within the national parks and other forested areas, it can also have effects where the roads are already present. With lower speed limits and rubberized asphalt, **33** the roads won't be quite so noisy, and the native fauna might feel just a little bit freer to roam.

30

- A) NO CHANGE
- B) traffic reduced
- C) traffic, reduced
- D) traffic—reduced

31

Which choice offers an accurate interpretation of the data in the figure?

- A) NO CHANGE
- B) will push avian populations northeast into North Carolina and northwest into western Tennessee.
- C) has planned an east-west route from Savannah to Knoxville and a north-south route from Augusta to Natchez.
- D) has planned a north-south route from Savannah to Knoxville and an east-west route from Augusta to Natchez.

32

Where is the most logical place in the paragraph to add the following sentence?

When there is so much distraction from outside noise, however, birds are more likely to be looking up than down, casting a cautious eye on their potentially perilous surroundings.

- A) After sentence 1
- B) After sentence 2
- C) After sentence 3
- D) After sentence 4

33

- A) NO CHANGE
- B) there won't be so much noise,
- C) they won't be so noisy,
- D) there won't be all the noisy roads,

CONTINUE

Questions 34–44 are based on the following passage.

A “Failed” Search for the American Southwest

Sometimes it really *is* about the journey rather than the destination. Francisco Vázquez de Coronado, an early Spanish explorer and **34** conquistador; died believing that he had failed in his mission, but his pursuit of that mission has been just as significant to history as it would have been had he achieved his goal. Coronado’s experience is an excellent window into the difficulty of assessing the Spanish explorers, **35** but also we can see the blurring of the line between hero and villain. In much the same way that Columbus is still praised as being the “discoverer” of the United States but reviled for the atrocities he **36** eviscerated against the native populations, Coronado presents a historical challenge.

Coronado’s aims were **37** fewer than noble. He didn’t particularly care about making history. He was

34

- A) NO CHANGE
- B) conquistador
- C) conquistador,
- D) conquistador—

35

- A) NO CHANGE
- B) wherein
- C) just as
- D) so too

36

- A) NO CHANGE
- B) did
- C) committed
- D) manifested

37

- A) NO CHANGE
- B) less, then
- C) less then
- D) less than

CONTINUE 

much more interested in making something **38** else, altogether: money. Coronado, **39** who grew up in a noble family in Spain, came to New Spain (present-day Mexico) when he was 25 years old. Within four years of his arrival, Coronado had become intoxicated by the circulating rumors of the Seven Cities of Gold. As rumor had it, these cities were richer than any place in the world and were waiting for someone to **40** arise to the challenge of claiming their bounty.

Of course, there were no such places, neither in Cíbola, a city just west of modern-day Albuquerque, nor in Quivira, a town in central Kansas. Coronado's disappointment was absolutely unforgiving and vicious: many fellow travelers died on these expeditions, and **41** many Zuni families in the region were slaughtered as a result of Coronado's greed.

38

- A) NO CHANGE
- B) else:
- C) else, nevertheless:
- D) else, and it was:

39

- A) NO CHANGE
- B) he grew
- C) growing
- D) whom grows

40

- A) NO CHANGE
- B) rise to
- C) arise
- D) rising to

41

Which choice provides information that best supports the claim made by this sentence?

- A) NO CHANGE
- B) the journeys were long and arduous.
- C) medical care was very limited at the time.
- D) no one stopped to see the sites.



[1] However, Coronado's journey was not entirely without merit. [2] That's a lot of territory to cover in the middle of the sixteenth century! [3] Notice how far we have traveled in this short essay alone. [4] We started in Spain, then went to Mexico, then to New Mexico, then to Kansas **42** after that. [5] Thus, while Coronado's tactics were vicious and his goals less than noble, he was nonetheless one of the first to provide reliable information on the terrains of vast stretches of the American West. [6] His expedition provided the first European sightings of the Grand Canyon, the Colorado River, and many of the lands along his route. **43**

Though Coronado's expedition may have been fraught with unpleasantness and we may balk at the idea of calling his sightings "discoveries," Coronado's contributions to the course of American history were nonetheless significant. His influence is all around us. **44** While Coronado may not have achieved his stated goal, we have his "failure" to thank for a large swath of the contemporary United States.

42

- A) NO CHANGE
- B) en route.
- C) while we were there.
- D) DELETE the underlined portion, and end the sentence with a period.

43

To make this paragraph most logical, sentence 2 should be placed

- A) where it is now.
- B) before sentence 1.
- C) before sentence 4.
- D) before sentence 5.

44

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

A small island off the coast of San Diego bears his name, as does a high school halfway across the country in Lubbock, Texas.

Should the writer make this addition here?

- A) Yes, because it names some of the places of which Coronado was most fond.
- B) Yes, because it cites some of the contemporary places that were influenced by Coronado.
- C) No, because it disagrees with the paragraph's central claims regarding Coronado's cruelty.
- D) No, because it introduces a tangent into the American Southwest that is not further elaborated.

STOP

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

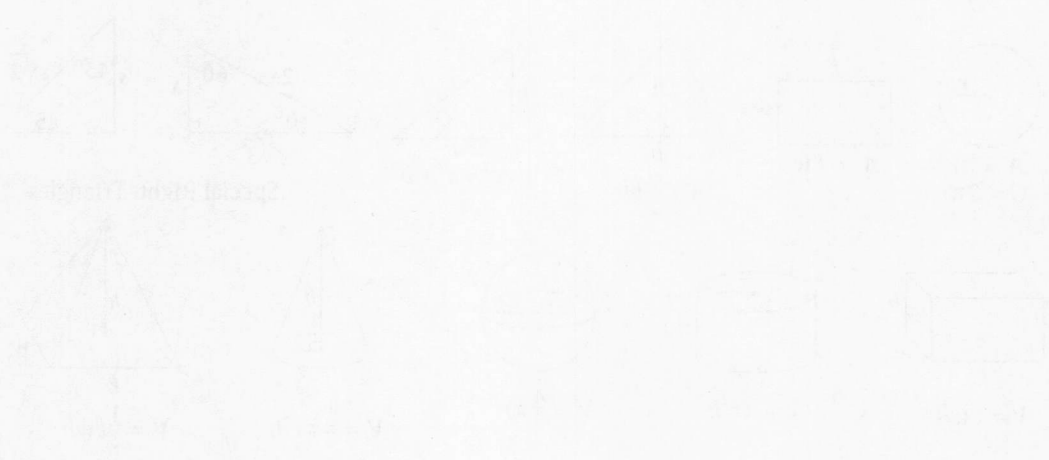
Math Test – No Calculator

25 MINUTES 20 QUESTIONS

Do not turn to the next page until you are told to do so.

For questions 1–12, you may use a calculator. For questions 13–20, you may not use a calculator. You are not permitted to use a calculator for any part of any question in this section.

No Test Material On This Page





Math Test – No Calculator

25 MINUTES, 20 QUESTIONS

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

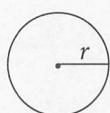
DIRECTIONS

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

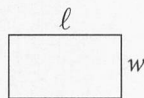
1. The use of a calculator **is not permitted**.
2. All variables and expressions used represent real numbers unless otherwise indicated.
3. Figures provided in this test are drawn to scale unless otherwise indicated.
4. All figures lie in a plane unless otherwise indicated.
5. Unless otherwise indicated,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

REFERENCE

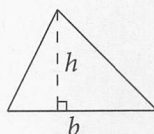


$$A = \pi r^2$$

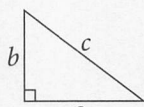
$$C = 2\pi r$$



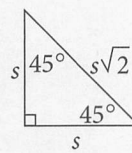
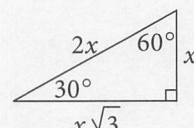
$$A = \ell w$$



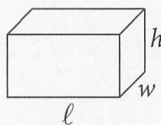
$$A = \frac{1}{2}bh$$



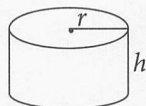
$$c^2 = a^2 + b^2$$



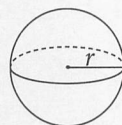
Special Right Triangles



$$V = \ell wh$$



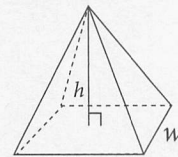
$$V = \pi r^2 h$$



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



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



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

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

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

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

CONTINUE



1

The cost C , in dollars, that a catering company charges to cater a wedding is given by the function $C = 20wt + 300$, where w represents the number of workers catering the wedding and t represents the total time, in hours, it will take to cater the wedding using w workers. Which of the following is the best explanation of the number 20 in the function?

- A) A minimum of 20 workers will cater the wedding.
- B) The cost of every wedding will increase by \$20 per hour.
- C) The catering company charges \$20 per hour for each worker.
- D) There will be 20 guests at the wedding.

2

If $12x + 4 = 20$, what is the value of $6x + 5$?

- A) 4
- B) 6
- C) 10
- D) 13

3

$$5x - 4y = 36$$

$$-x - y = 0$$

Which of the ordered pairs (x, y) below is a solution to the system of equations shown above?

- A) $(-5, 4)$
- B) $(-4, 4)$
- C) $(4, -4)$
- D) $(5, -4)$

4

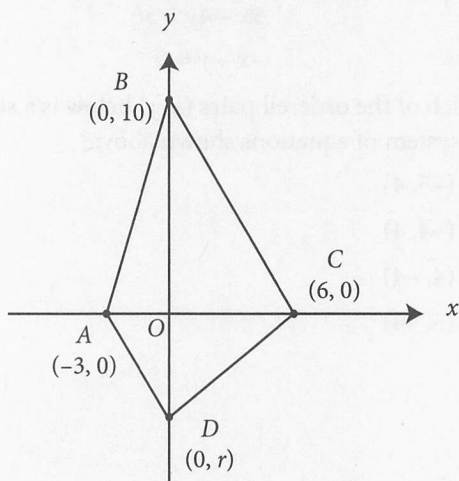
In the equation $y - \sqrt{4x^2 + 28} = 0$, $x > 0$ and $y = 8$. What is the value of x ?

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

CONTINUE 



5



The figure above shows quadrilateral $ABCD$ in the xy -plane. If BC is parallel to AD , what is the value of r ?

- A) -6
- B) -5
- C) -3
- D) -2

6

Which of the following expressions is equivalent to $16x^6 - 24x^3y^3 + 9y^6$?

- A) $(16x^2 - 9y^2)^3$
- B) $(16x^3 - 9y^3)^2$
- C) $(4x^3 - 3y^3)^2$
- D) $(4x - 3y)^6$

7

$$S = 180(n - 2)$$

The measure S , in degrees, of the sum of the angles in a polygon is related to the number of sides, n , of the polygon by the formula above for all $n > 2$. If the sum of the angles of a polygon is greater than $2,000^\circ$, then what is the least number of sides it can have?

- A) 11
- B) 12
- C) 13
- D) 14

8

The graph of line k in the xy -plane has a y -intercept of -8 and contains the point $(4, 4)$. The graph of line m contains the points $(1, 5)$ and $(5, -3)$. If lines k and m intersect at the point (s, t) , what is the value of $s - t$?

- A) 2
- B) 3
- C) 4
- D) 5

CONTINUE



9

$$(k^{x^2 + xy})(k^{y^2 + xy}) = k^{25}$$

In the equation above, $k > 1$ and $x = 3$. What is the positive value of y ?

- A) 1
- B) 2
- C) 4
- D) 5

10

$$F = \frac{D}{E - D}$$

A factory tracks quality control by using the formula above to determine a fault rating, F , based on the number of defective parts, D , and the number of acceptable parts, E . Which of the following expresses D , in terms of F and E ?

- A) $D = \frac{E}{1 - F}$
- B) $D = \frac{E}{1 + F}$
- C) $D = \frac{FE}{1 - F}$
- D) $D = \frac{FE}{1 + F}$

11

The graph in the xy -plane of the function g has the property that y is always greater than or equal to -2 . Which of the following could be g ?

- A) $g(x) = x^2 - 3$
- B) $g(x) = (x - 3)^2$
- C) $g(x) = |x| - 3$
- D) $g(x) = (x - 3)^3$

12

Which of the following complex numbers is equivalent to $\frac{1 + 10i}{6 - 3i}$? (Note: $i = \sqrt{-1}$)

- A) $\frac{1}{6} + \frac{10i}{3}$
- B) $-\frac{1}{6} + \frac{10i}{3}$
- C) $\frac{8}{15} + \frac{7i}{5}$
- D) $-\frac{8}{15} + \frac{7i}{5}$



13

The estimated value of a truck declines at an annual rate of 7 percent. If the original value of the truck was \$35,000, which of the functions v best models the value of the truck, in dollars, t years later?

- A) $v(t) = 0.07(35,000)^t$
- B) $v(t) = 0.93(35,000)^t$
- C) $v(t) = 35,000(0.07)^t$
- D) $v(t) = 35,000(0.93)^t$

14

$$\frac{6x - 1}{x + 4}$$

Which of the following is equivalent to the expression above?

- A) $6 - \frac{25}{x + 4}$
- B) $6 - \frac{1}{x + 4}$
- C) $6 - \frac{1}{4}$
- D) $\frac{6 - 1}{4}$

15

$$3k^2 - 18k + 12 = 0$$

What is the product of all values of k that satisfy the equation above?

- A) 3
- B) 4
- C) $3\sqrt{5}$
- D) $6\sqrt{5}$



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.

5. **Mixed numbers** such as $3\frac{1}{2}$ must be gridded as 3.5 or 7/2. (If

3	1	/	2
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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

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

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

Write answer in boxes. →

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

Grid in result. →

Answer: 2.5

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

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

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

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

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

Answer: 201 – either position is correct

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

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

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

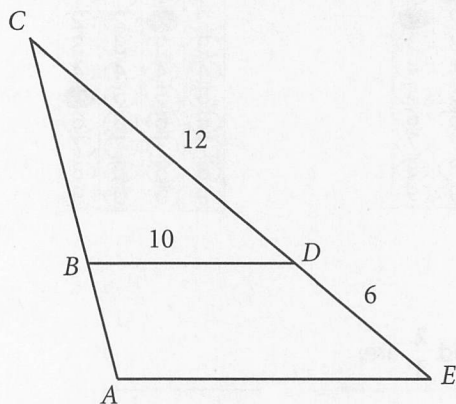
CONTINUE →



16

In the equation $3(x - 5)^2 + 7 = ax^2 + bx + c$, a , b , and c are constants. If the equation is true for all values of x , what is the value of c ?

17



In the figure above, $\overline{BD} \parallel \overline{AE}$. What is the length of \overline{AE} ?

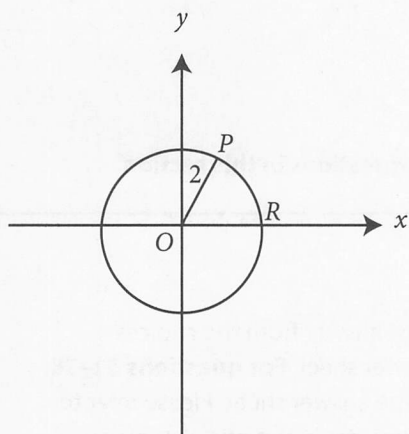
18

At the end of a card game, Eve has a pile of red and blue chips that is worth \$120. If red chips are worth \$5 and blue chips are worth \$20, and Eve has at least one red chip and at least one blue chip, what is one possible number of red chips Eve has?

19

$$\begin{aligned} \frac{1}{2}x + ay &= 16 \\ bx + 4y &= 48 \end{aligned}$$

In the system of equations shown above, a and b are constants. If there are infinitely many solutions for this system, what is the value of $a + b$?



The xy -plane above shows the circle with center O and radius 2. If the measure of $\angle POR$ is $\frac{\pi}{3}$ radians, what is the x -coordinate of point P ?

STOP

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



Math Test – Calculator

55 MINUTES, 38 QUESTIONS

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

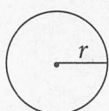
DIRECTIONS

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 31 on how to enter your answers in the grid. You may use any available space in your test booklet for scratch work.

NOTES

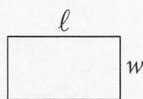
1. The use of a calculator is permitted.
2. All variables and expressions used represent real numbers unless otherwise indicated.
3. Figures provided in this test are drawn to scale unless otherwise indicated.
4. All figures lie in a plane unless otherwise indicated.
5. Unless otherwise indicated, the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

REFERENCE

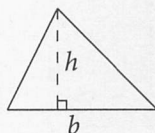


$$A = \pi r^2$$

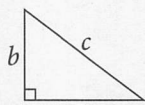
$$C = 2\pi r$$



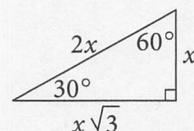
$$A = lw$$



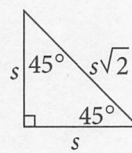
$$A = \frac{1}{2}bh$$



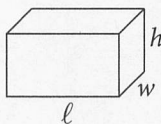
$$c^2 = a^2 + b^2$$



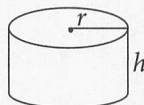
$$x\sqrt{3}$$



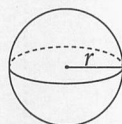
Special Right Triangles



$$V = lwh$$



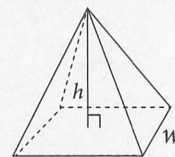
$$V = \pi r^2 h$$



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



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



$$V = \frac{1}{3}lwh$$

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

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

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

CONTINUE



1

A contractor creates a mosaic floor pattern in which there are 9 blue tiles for every 80 tiles in total. At this rate, how many blue tiles will there be in a floor pattern of 4,800 tiles?

- A) 700
- B) 620
- C) 540
- D) 480

2

$$c = 120 + 75d$$

A couple rents a car for their vacation. When a particular car is rented for d days, the total cost will be c dollars as shown in the equation above. What is the value of d when c is 345?

- A) 25,995
- B) 354
- C) 75
- D) 3

3

An artist creates prints of her latest painting to sell. The artist earns \$50 for each large print she sells and \$35 for each small print she sells. Which of the following expressions represents the amount, in dollars, that the artist earns for selling l large prints and s small prints?

- A) $50l + 35s$
- B) $50l - 35s$
- C) $35l + 50s$
- D) $35l - 50s$

4

When 6 times a number y is subtracted from 15, the result is 33. What number results when 3 times y is added to 19?

- A) -3
- B) 7
- C) 10
- D) 28

CONTINUE 



Questions 5 and 6 refer to the following information.

A television store's revenue is directly proportional to the number of televisions it sells. The store earns \$1,440 on a day in which it sells 6 televisions.

5

The store pays the factory 39% of the money earned from the sale of each television. The rest of the money earned is the store's profit. What is the profit the store makes on a day in which it sells 6 televisions?

- A) \$390.00
- B) \$561.60
- C) \$690.00
- D) \$878.40

6

How much revenue will the store earn on a day in which it sells 9 televisions?

- A) \$960
- B) \$2,160
- C) \$8,640
- D) \$12,960

7

A record collector is looking to buy records that cost either \$20 or \$35 each. Let a be the number of \$20 records and b be the number of \$35 records. The collector can buy a maximum of 25 records and can spend up to \$750. Which of the following systems of inequalities accurately describes this relationship?

A)
$$\begin{cases} a + b \leq 750 \\ 20a + 35b \leq 25 \end{cases}$$

B)
$$\begin{cases} 20a + 35b \leq 750 \\ a + b \leq 750 \end{cases}$$

C)
$$\begin{cases} \frac{a}{20} + \frac{b}{35} \leq 750 \\ a + b \leq 25 \end{cases}$$

D)
$$\begin{cases} 20a + 35b \leq 750 \\ a + b \leq 25 \end{cases}$$

8

$$y = x^2 - 12x + 35$$

The equation above is a quadratic equation. Which of the following equivalent forms of the equation displays the x -intercepts of the parabola in the xy -plane as constants or coefficients?

- A) $y + 1 = (x - 6)^2$
- B) $y - 35 = x^2 - 12x$
- C) $y = (x - 5)(x - 7)$
- D) $y = x(x - 12) + 35$

CONTINUE



9

In a certain quiz game, each player begins with p points, loses 3 points for every question answered incorrectly, and cannot increase his or her score. If a player who answers 15 questions incorrectly has a score of 165, which of the following is the value of p ?

- A) 210
- B) 180
- C) 140
- D) 0

10

Number of hours per day Albert expects to devote to typing the document	4
Number of units in the document	21
Number of words Albert types per minute	85
Number of sections in the document	145
Number of pages in the document	725
Number of words in the document	181,235

Albert needs to type a long, prewritten document. The table above shows information about the document, Albert's typing speed, and the number of hours he expects to devote to typing the document each day. If Albert types at the rates provided in the table, which of the following is closest to the number of days Albert would expect to take in order to type the entire document?

- A) 9
- B) 36
- C) 148
- D) 2,132

11

At 9:00 A.M. on Monday, a trash can with a capacity of 20 cubic feet contains 8 cubic feet of garbage. Each day after Monday, 3 cubic feet of garbage are added to the trash can. If no garbage is removed and d represents the number of days after Monday, which of the following inequalities describes the set of days for which the trash can is full or overflowing?

- A) $12 \geq 3d$
- B) $8 + 3d \geq 20$
- C) $20 - 3 \leq d$
- D) $20 \leq 3d$

12

In function m , $m(4) = 6$ and $m(6) = 10$. In function n , $n(6) = 4$ and $n(10) = 2$. What is the value of $m(n(6))$?

- A) 2
- B) 4
- C) 6
- D) 10

CONTINUE



13

The circumference of Earth's equator is approximately 40,000 kilometers. Earth rotates completely around its axis in one day. Which of the following is the closest approximation of the average speed, in kilometers per minute, of a point on Earth's equator, as the Earth rotates about its axis?

- A) 18
- B) 20
- C) 28
- D) 56

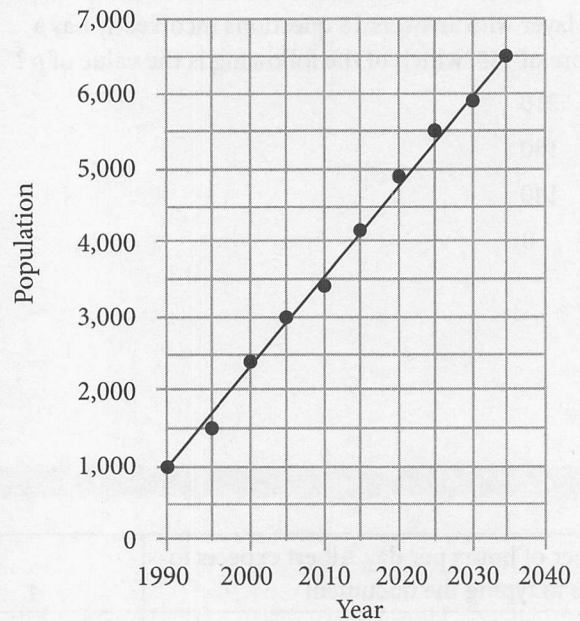
14

A theater owner wanted to determine whether local residents were more interested in seeing operas or symphonies. The theater owner asked 85 people who were in a shopping mall on a Sunday and 5 people declined to respond. Which of the following factors is the greatest flaw in the theater owner's methodology in reaching a reliable conclusion about the local residents' performance-viewing preferences?

- A) The size of the sample
- B) The location in which the survey was given
- C) The population of the area
- D) The residents who declined to respond

15

Population of Town T from 1990
Projected Through 2035



According to the line of best fit in the scatterplot above, which of the following best approximates the year in which the population of Town T is projected to reach 5,000?

- A) 2017
- B) 2022
- C) 2028
- D) 2033

16

The half-life of an unknown isotope is approximately 25% less than that of carbon-14. The half-life of carbon-14 is 5,730 years. Which of the following best approximates the half-life, in years, of the unknown isotope?

- A) 1,400
- B) 4,300
- C) 5,705
- D) 7,200

CONTINUE



17

A company's accounting department took a survey of its employees' salaries and found that the mean salary was \$80,000 and that the median salary was \$45,000. Which of the following could explain the difference between the mean and the median salary in the company?

- A) Many of the employees' salaries are between \$45,000 and \$80,000.
- B) The employees have salaries that are close to each other.
- C) There are a few employees with salaries that are much lower than the rest.
- D) There are a few employees with salaries that are much higher than the rest.

18

Results of Interview for Applicants to College C

	Accepted by College C	Rejected by College C
Completed interview	15,700	34,300
Did not complete interview	9,300	40,700

The table above summarizes the results of the 100,000 applicants to College C. If an accepted student is randomly chosen, what is the probability that the student did not complete an interview?

- A) $\frac{93}{1,000}$
- B) $\frac{1}{4}$
- C) $\frac{93}{250}$
- D) $\frac{157}{250}$

19

Mathias saves an average of d dollars per month, where $d > 300$. The actual amount he saves per month varies, but is always within \$20 of the average amount. If Mathias saved k dollars this month, which of the following inequalities expresses the relationship between k , the amount he saved this month, and d , the average amount he saves per month?

- A) $d - k < 20$
- B) $d + k < 20$
- C) $-20 < d - k < 20$
- D) $-20 < d + k < 20$

CONTINUE



Questions 20 and 21 refer to the following information.

The class president chose 200 students at random from each of the junior and senior classes at her high school. Each student was asked how many hours of homework he or she completed in an average school night. The results are shown in the table below.

Number of hours	Junior class	Senior class
1	25	30
2	80	70
3	50	60
4	35	35
5	10	5

There are a total of 600 students in the junior class and 400 students in the senior class.

20

What is the median number of hours of homework in an average night for all the students surveyed?

- A) 2
- B) 3
- C) 4
- D) 5

21

Based on the survey data, which of the following statements accurately compares the expected total number of members of each class who complete four hours of homework?

- A) The total number of students who complete four hours of homework in the junior class is 35 more than in the senior class.
- B) The total number of students who complete four hours of homework in the senior class is 35 more than in the junior class.
- C) The total number of students who complete four hours of homework in the junior class is 200 more than in the senior class.
- D) The total number of students who complete four hours of homework is expected to be the same in both classes.

22

The equation of circle P in the xy -plane can be represented as $x^2 + y^2 - 6x + 8y = -9$. What is the radius of circle P ?

- A) 2
- B) 4
- C) 8
- D) 16

CONTINUE



Questions 23 and 24 refer to the following information.

$$G = \frac{ab}{d^2}$$

The gravitational force, G , between an object of mass a and an object of mass b is given by the formula above, where d represents the distance between the two objects.

23

Which of the following expressions represents the square of the distance between the two objects in terms of the masses of the objects and the gravitational force between them?

A) $d^2 = \frac{Gb}{a}$

B) $d^2 = \frac{Ga}{b}$

C) $d^2 = \frac{G}{ab}$

D) $d^2 = \frac{ab}{G}$

24

Objects k and m have the same masses, respectively, as do objects a and b . If the gravitational force between k and m is 9 times the gravitational force between a and b , then the distance between k and m is what fraction of the distance between a and b ?

A) $\frac{1}{243}$

B) $\frac{1}{81}$

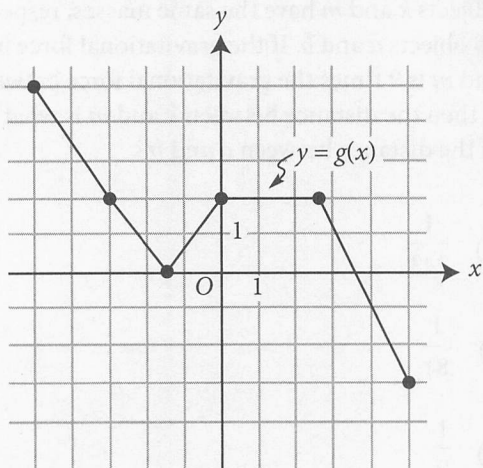
C) $\frac{1}{9}$

D) $\frac{1}{3}$

CONTINUE 



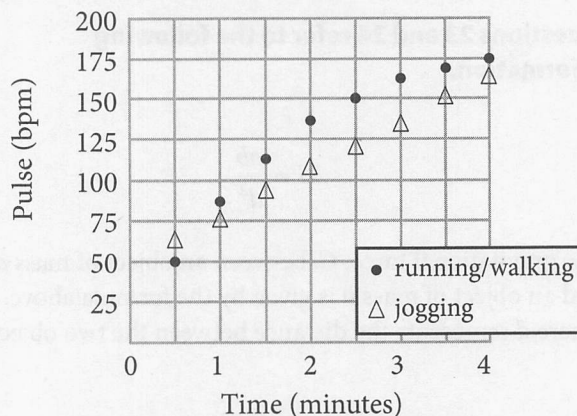
25



The figure above shows the complete graph of the function g in the xy -plane. Which of the following must be true?

- I. $g(-3) = 2$
- II. $g(2) = -3$
- III. $g\left(\frac{1}{2}\right) = g(2)$
- A) III only
- B) I and II only
- C) I and III only
- D) I, II, and III

26



Two athletes have their pulses, in beats per minute (bpm), monitored while they exercise. One athlete alternates brisk running with walking, while the other athlete jogs at a constant pace. The graph above shows the athletes' heart rates at 30-second intervals. Which of the following statements accurately compares the average rates at which the pulses of the two athletes change?

- A) In the interval from 1 to 2 minutes, the rate of change of pulse for the athlete who alternates running and walking is of lesser magnitude than the rate of change of pulse for the athlete who jogs only, whereas in the interval from 3 to 4 minutes, the rate of change of pulse for the athlete who jogs only is of lesser magnitude.
- B) In the interval from 1 to 2 minutes, the rate of change of pulse for the athlete who jogs only is of lesser magnitude than the rate of change of pulse for the athlete who alternates running and walking, whereas in the interval from 3 to 4 minutes, the rate of change of pulse for the athlete who alternates running and walking is of lesser magnitude.
- C) In every 30-second interval, the rate of change of pulse for the athlete who alternates running and walking is of lesser magnitude than it is for the athlete who jogs only.
- D) In every 30-second interval, the rate of change of pulse for the athlete who jogs only is of lesser magnitude than it is for the athlete who alternates running and walking.

CONTINUE

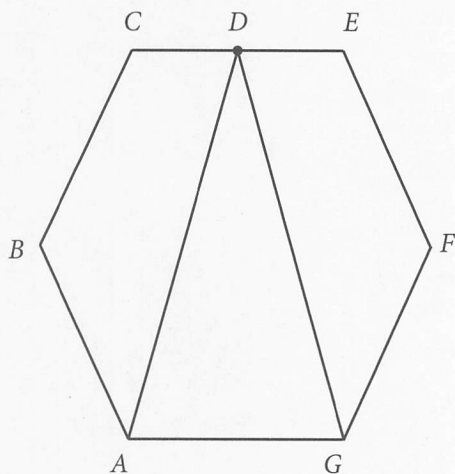


27

The graph in the xy -plane of linear function g has an x -intercept at $(s, 0)$ and a y -intercept at $(0, t)$. If $t - s = 0$, $t \neq 0$, and $s \neq 0$, which of the following must be true about the graph of g ?

- A) It has a positive slope.
- B) It has a negative slope.
- C) It has a slope of zero.
- D) It has no slope.

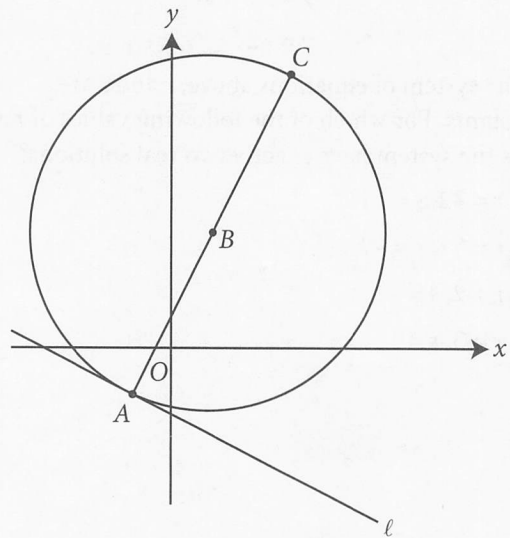
28



In the figure above, $ABCF$ is a regular hexagon and D is the midpoint of \overline{CE} . If the area of the hexagon is $864\sqrt{3}$ square feet, what is the area, in square feet, of triangle ADG ?

- A) 144
- B) 432
- C) $288\sqrt{3}$
- D) $432\sqrt{3}$

29



In the xy -plane above, \overline{AC} is the diameter of the circle centered at B , and the coordinates of points A and C are $(-1, -1)$ and $(3, 7)$, respectively. If line ℓ is tangent to the circle at point A , which of the following is an equation of line ℓ ?

- A) $y = -\frac{1}{2}(x + 3)$
- B) $y = -\frac{1}{2}x + 3$
- C) $y = -2x + 1$
- D) $y = -2x - 3$

CONTINUE



30

$$y = rx^2 + s$$

$$y = -2$$

In the system of equations above, r and s are constants. For which of the following values of r and s does the system have exactly two real solutions?

- A) $r = -2, s = -1$
- B) $r = -1, s = -2$
- C) $r = 2, s = -2$
- D) $r = 3, s = 1$

**CONTINUE**


DIRECTIONS

For questions 31–38, solve the problem and enter your answer in the grid, as described below, on the answer sheet.

- Although not required, it is suggested that you write your answer in the boxes at the top of the columns to help you fill in the circles accurately. You will receive credit only if the circles are filled in correctly.
- Mark no more than one circle in any column.
- No question has a negative answer.
- Some problems may have more than one correct answer. In such cases, grid only one answer.
- Mixed numbers** such as $3\frac{1}{2}$ must be gridded as 3.5 or 7/2. (If

3	1	/	2
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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

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

Write answer in boxes. →

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

← Fraction line

Grid in result. →

Answer: 2.5

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

← Decimal point

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

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

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

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

Answer: 201 – either position is correct

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

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

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

CONTINUE



31

If 560 minutes is equal to z hours and 20 minutes, what is the value of z ?

32

A climate scientist estimates that a certain state's average snowfall is decreasing by 0.4 inch per year. If the scientist's estimate is accurate, how many years will it take for the average annual snowfall to be 6 inches less than it is now?

33

Dave was charged a fine for returning a number of overdue books to the library. Each week after he incurred the fine, he paid the library a fixed amount until the fine was paid off. The equation $C = 12 - 1.5w$, where $C \geq 0$, models the amount C , in dollars, that Dave owes w weeks after he incurred the fine. According to this model, how much money, in dollars, did Dave initially owe the library? (Disregard the \$ sign when gridding in your answer.)

34

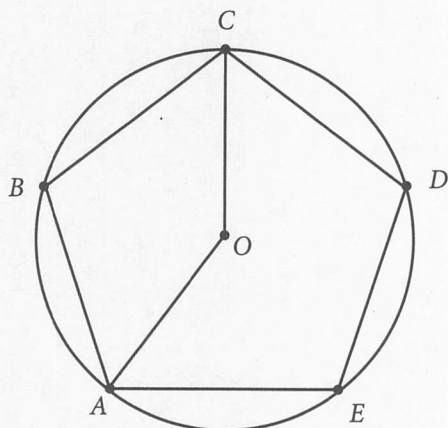
$$g(x) = 2x^2 - kx + 14$$

In the xy -plane, the graph of the function above contains the point $(4, -2)$. What is the value of k ?

CONTINUE 



35



In the figure above, the circle is centered at point O , $ABCDE$ is a regular pentagon, and $ABCO$ is a quadrilateral. If the length of arc \widehat{ABC} is 24, what is the circumference of circle O ?

36

Satya ate a breakfast sandwich and an order of fried potatoes, and consumed a total of 910 calories. If the breakfast sandwich contained 240 more calories than the fried potatoes, how many calories did the breakfast sandwich contain?

Questions 37 and 38 refer to the following information.

$$P_{t+1} = P_t + 0.3(P_t) \left(1 - \frac{P_t}{C}\right)$$

A certain species of deer on an isolated island has a current population of 4,200. The estimated population of deer next year, P_{t+1} , is related to the population this year, P_t , by the formula above. In this formula, the constant C represents the maximum number of deer the island is capable of supporting.

37

Suppose that environmental conditions on the island changed suddenly, and there was a resultant decrease in the maximum number of deer the island is capable of supporting. If the number of deer increases from 4,200 this year to 4,704 next year, what would be the maximum number of deer the island is capable of supporting?

38

If $C = 10,500$, and the given formula is accurate, what will the population of deer be 2 years from now? (Round your answer to the nearest whole number.)

END OF TEST

DO NOT RETURN TO A PREVIOUS SECTION.