SECTION 1: READING

Questions 1-10 are based on the following passage.

This passage is adapted from Carolina De Robertis, *The Gods of Tango*. ©2015 by Carolina De Robertis. Leda is traveling by ship from Italy to Buenos Aires, Argentina, to live with her new husband, Dante. It is 1913.

Line

The deck burst with people, just as it had the day they'd left Naples. There were no longer any lazy card games with which to kill the hours. Boredom had sloughed overboard into the sea. Everybody was on their feet, crowded against the rail, craning their necks in the direction of land.

Argentina. She pressed into the throng, toward the rail. To her right, a young woman murmured a rosary. To her left, a man in his forties was drying his tears, while the younger man beside him behaved with indifference or, Leda thought, a convincing performance of indifference. His demeanor seemed the most theatrical of all. She smelled the hopeful tang of cologne. In front of her, three or four chaotic rows ahead, two men were exclaiming to each other about the land they saw.

"*Che bella*. Beautiful."

"Yes. Beautiful."

Again and again they said it, as though repetition would solidify the truth of the phrase, make it strong enough to sustain them as they disembarked. Their voices wove through the wails and murmurs in the crowd. She gently jostled forward. A man in front of her moved away, apparently having seen enough, and she slunk into his space before it could close, before anyone could notice. She was starved for the sight of land, not just any land, but this land—Buenos Aires, her new home. Over the past three weeks, she had spent many hours alone at these rails, staring out at endless ocean, trying to imagine what Buenos Aires would be like. Over and over she tried to picture the city, but her mind's eye could conjure only the lush tropical ferns and trees of the Botanical Garden, where Dante had taken a photograph of himself when he'd first arrived, to send to the family back home. It had been passed around the table at Sunday lunch, to clucks of admiration and bemusement.

He's really there, in Argentina.

He looks happy.

He looks too skinny.

Look at those parrots, they're big enough to eat him!

Don't be ridiculous, Mario. Those are fake. Just painted wood.

How can you be so sure?

I have eyes in my head.

I was just—

No fighting today, Leda's mother said.

How about we let his bride take a look?

That's right! Leda, do you want to see?

The photograph arrived in Leda's hands. In it, Dante stood surrounded by strange ferns with enormous fronds and two garish parrots that, although she believed her brother's insistence to the contrary, seemed intensely alive. Dante's mouth curled into a smirk. *I own this place,* his posture seemed to say. Of course, just because that was the place where he'd found a photographer to take his portrait didn't mean the whole city looked that way. She knew this; at least part of her knew this. But the image still glowed in her mind.

A cluster of men in front of her had had their fill of the approaching land, and when they moved, she stepped forward to the rail and leaned against it. Wind whipped her face and stung her nostrils with saline air. She feared the wind might tear her blue hat right off her head, despite the several pins she'd used to place it, and losing the hat—the finest thing she'd ever worn, with real pearls stitched on, *fit for a bride,* her mother had said—would be unbearable, so she reached up and gripped it with both hands. The throng around her seemed to melt away (as it surely did for everyone else: 368 Italians, all wandering their own private visions of Argentina in their minds) as her eyes roved the distant city, Buenos Aires, lying low across the water. The buildings were still so small that she could not discern anything about them, except, of course, that they existed—that while she and her compatriots still had no idea what they would find when they disembarked, they would at least find something, a true place that might show them what they'd ridden across the open ocean for; that the Américas were more than some fable concocted by ship lines and ticket agents and relatives with their carefully calibrated letters home, even if seeing that the Américas exist does not at all reveal the true mystery, a mystery much harder to resolve, namely, what the Américas actually are.

Leda stood for a long time, watching Buenos Aires glide toward her, and, because she did not yet dare to imagine its buildings, how she would fit inside and between them, she pictured herself in that garden with Dante, strolling past exotic ferns and sleeping curled together beneath them as they might under the wings of a great forgiving swan.

1 The passage indicates that parts of the journey from Naples to Buenos Aires have been

A. hazardous.

B. tedious.

C. disheartening.

D. perplexing.

2 As used in line 12, "wove" most nearly means

A. intermingled.

B. formed.

C. invented.

D. folded.

3 Based on the passage, which statement best describes Leda's attitude about moving to Argentina?

A. Leda longs to arrive in her new country even though she has little concept of what awaits her.

B. Leda looks forward to starting a new life with Dante even though she will miss her family.

C. Leda is initially curious about living abroad but becomes nervous after leaving her homeland.

D. Leda is uncertain about moving but feels reassured after seeing Dante's photograph.

4 Which choice best supports the idea that the photograph of Dante prompts Leda to consider his mindset?

A. line 17-19 ("Over . . . home")

B. line 19-20 ("It had . . . bemusement")

C. line 29-31 ("No fighting . . . see")

D. line 34-35 ("Dante's . . . say")

5 As used in line 37, "glowed" most nearly means

A. radiated heat.

B. remained vivid.

C. provided light.

D. gained intensity.

6 The phrase in parentheses in line 43-44 ("as it . . . minds") mainly serves to

A. emphasize the similarities between Leda's initial impressions of Argentina and those of the other passengers.

B. convey the passengers' growing confidence in what the future holds for them.

C. highlight that Argentina represents something unique to each passenger.

D. note that Leda feels disconnected from the other passengers despite being surrounded by them.

7 The passage most strongly suggests that Leda's distant view of the buildings on the Argentinian coast

A. awakens her excitement at having finally fulfilled her dream to travel abroad.

B. reinforces her sense of her ignorance about the realities of her new life.

C. ignites her determination to help her husband improve his business.

D. underscores her disappointment with the urban location of her new home.

8 According to the passage, the accounts often told about the Américas are

A. healing, because the accounts promise comfort to travelers escaping hardships.

B. instructive, because the accounts provide travelers with suggestions for how to succeed.

C. misleading, because the accounts present travelers with a portrayal that is not necessarily accurate.

D. discouraging, because the accounts suggest the degree of adjustment facing travelers may be greater than they anticipated.

9 It can reasonably be inferred from the passage that for Leda, the garden in the photograph mainly represents

A. a reassuring daydream in the face of an uncertain future.

B. a revealing indication of the amenities commonly found in Buenos Aires.

C. an unexpected confirmation that her hopes for her new life will be fulfilled.

D. an impressive sign of her husband's achievements in Argentina.

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

A. line 32-34 ("In it . . . alive")

B. line 35-36 ("Of course . . . way")

C. line 36-37 ("She knew . . . mind")

D. line 52-55 ("Leda . . . swan")

Questions 11-21 are based on the following passage and supplementary material.

This passage is adapted from Matthew Warren, "People Who Use More Happy Words Are Not Necessarily Happier—an Awkward Finding for Language-Based Emotion Research." ©2019 by the British Psychological Society.

Line

The age of social media has opened up exciting opportunities for researchers to investigate people's emotional states on a massive scale. For example, one study found that tweets contain more positive emotional words in the morning, which was interpreted as showing that most people are in a better mood at that time of day.

The premise of this line of research is that our word choices reflect our psychological states—that if someone uses more positive or negative emotional words, this is a good indication that they are actually experiencing those emotions. But now a new study has thrown a wrench in the works, finding that—for spoken language at least—this assumption might not hold up. Psychologist Jessie Sun and colleagues found that emotion-related words do not in fact provide a good indication of a person's mood, although there may be other sets of words that do.

Sun's team asked 185 American university students to wear a recording device for a week, which recorded a 30 second snippet of sound every 9.5 minutes. Four times per day, the participants also completed a survey via text message measuring the positive and negative emotions they had experienced over the previous hour.

The team ended up with a whopping 150,000 recordings, which research assistants transcribed over the course of two years, weeding out clips which contained no speech or just a few words. They then scored each recording according to how many positive and negative emotion words it contained (like "sweet" or "hurt"), by running the text through an analysis programme called the Linguistic Inquiry and Word Count, which contains dictionaries of words associated with different topics. Finally, the team averaged the scores for all clips from the same three-hour period surrounding each questionnaire, ending up with 1,579 language-based emotion measurements that they could directly compare to participants' self-reported mood.

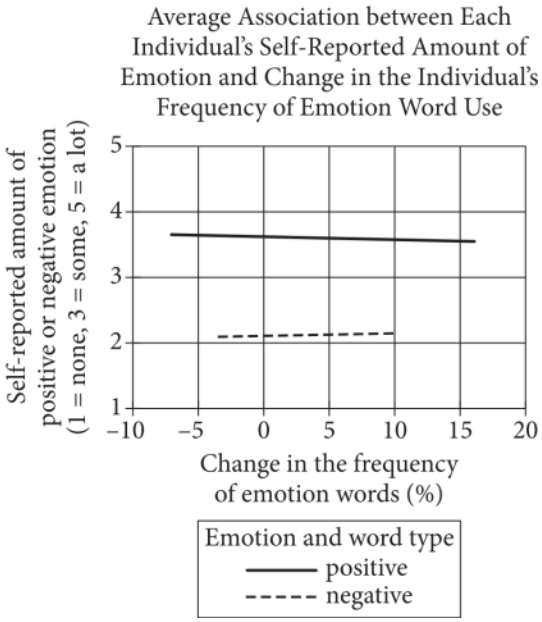
The researchers found that—contrary to the assumptions of some past studies—the number of positive and negative emotional words was not associated with participants' actual mood. "Our findings suggest that researchers should not assume that fluctuations in . . . [the use of emotional words] . . . can be used as a proxy for subjective emotion experience, at least for spoken language", the authors write.

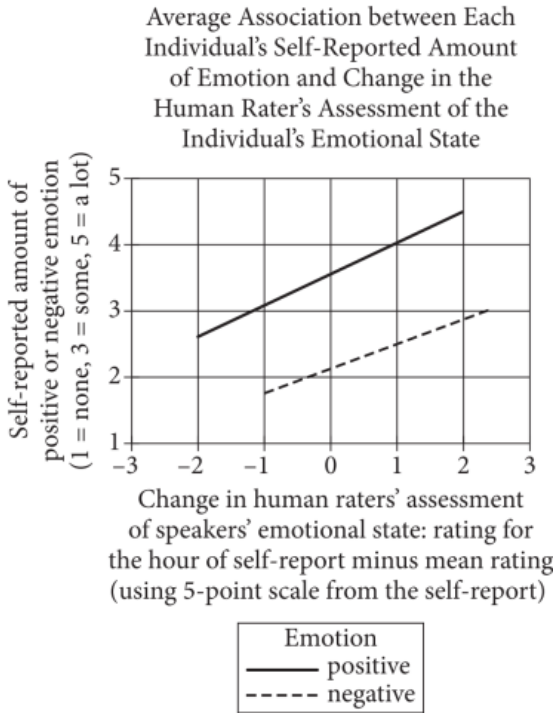
But the recordings did contain some emotional information: the research assistants' assessment of the speaker's emotions, based on listening to the recordings, *was* associated with participants'

rating of their own mood. The authors suggest that the human raters were picking up on non-verbal cues relating to emotion—things like intonation and volume—that the programme itself was missing.

In an exploratory analysis, the authors also examined whether any other sets of words unrelated to emotion could predict participants' mood. They found that greater use of words related to socialising, like "you" or "we", was associated with experiencing more positive emotion, while use of maths words, like "minus" and "number", was related to less positive emotion. However, these associations were weak, so may not be useful measures of emotion, say the authors.

There are other possible explanations for the null results in the study, which the authors acknowledge. It could be that a person's use of emotion-related words taps into an aspect of emotion that also isn't captured by self-report questionnaires—perhaps one that participants themselves aren't consciously aware of. Alternatively, the dictionaries themselves may not always reflect how people use words: for example, the word "pretty" appears in the positive dictionary, but could be used in a negative context (e.g. "it was pretty terrible").





Figures adapted from Jessie Sun et al., "The Language of Well-Being: Tracking Fluctuations in Emotion Experience through Everyday Speech." ©2019 by American Psychological Association.

11 The main purpose of the passage is to

A. present findings that weaken the popular theory that social media usage alters individuals' emotional vocabularies.

B. summarize an experiment intended to investigate a hypothesis about how language usage affects emotional states.

C. describe research that challenges an assumption underlying studies about the relationship between language and emotions.

D. discuss a study that incorporates the use of some novel tools developed for the study of emotionally charged language.

12 Based on the passage, which finding, if true, would most strongly support the reliability of the method used by Sun's team?

A. People tend to explicitly describe their emotional states less frequently than every 9.5 minutes.

B. People tend to retain fairly accurate memories of their emotional states for several hours after experiencing them.

C. People tend to report positive emotional states as being of greater duration than are negative emotional states.

D. People tend to be more accurate when evaluating friends' emotional states than when evaluating strangers' emotional states.

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

A. line 5-7 ("The premise . . . emotions")

B. line 7-8 ("But . . . hold up")

C. line 11-12 ("Sun's . . . minutes")

D. line 12-14 ("Four . . . hour")

14 A student raises the possibility that a single clip containing an unusually high number of emotional words could have a disproportionate influence on Sun's team's measurement of that participant's emotional word use. Which choice best supports the idea that Sun's team accounted for this possibility in the design of the study?

A. line 15-16 ("The team . . . words")

B. line 16-19 ("They . . . topics")

C. line 19-22 ("Finally . . . mood")

D. line 23-24 ("The researchers . . . mood")

15 One important function of the quotation from Sun's team's study in line 24-26 ("Our . . . language") is to

A. suggest how the study's conclusions could influence the design of future studies.

B. acknowledge that additional research may be needed to validate the team's findings.

C. emphasize that the study qualifies rather than overturns a controversial view.

D. rule out a potential criticism of how the study was carried out.

16 Based on the passage, Sun's team would most likely agree that one limitation of using transcriptions of speech to evaluate speakers' emotions is that

A. transcriptions are prone to erroneous representations of speakers' word choices.

B. most of the words in a transcription will typically not be emotionally positive or negative.

C. information about speakers' emotions can be conveyed in ways that transcriptions do not represent.

D. transcribed speech from speakers in highly emotional states tends to be difficult for readers to comprehend.

17 According to the passage, Sun's team found that the associations they detected between emotional states and certain groups of nonemotional words were

A. not strong enough to simply treat those groups of words as reliable indicators of emotional states.

B. not widespread enough to exclude the possibility that only a subgroup of individuals uses those words in emotional ways.

C. so weak that emotional words are a preferable measure of speakers' emotions.

D. so surprising that the team suspects that they may have made errors in transcribing those words.

18 As used in line 39, “captured” most nearly means

A. controlled.

B. recorded.

C. conquered.

D. attracted.

19 Information in the passage most strongly suggests that the results shown in figure 1 might be due in part to

A. human raters detecting changes in participants’ emotional states based on factors such as intonation and volume.

B. participants unconsciously altering their word choices as a result of knowing that their speech would be analyzed.

C. the classification of some words as positive or negative not accurately indicating how participants used those words.

D. words related to socializing being more likely to be classified as positive emotion words than as negative emotion words.

20 According to figure 2, when the change in human raters’ assessment of speakers’ emotional state was 1, the average self-reported amount of positive emotion was approximately

A. 1.8.

B. 2.5.

C. 3.

D. 4.

21 Both figures support which statement about participants in the study, on average?

A. They reported greater amounts of positive emotion than negative emotion.

B. They used more positive emotion words than negative emotion words.

C. They experienced little change in emotional state over the course of the day.

D. They showed a decline in the frequency of positive emotion words as human raters’ assessment of their emotional state increased.

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

This passage is adapted from Lisa Grossman, "The Moon's Craters Suggest Earth Hasn't Erased Lots of Past Impacts." ©2019 by Society for Science & the Public.

Geologists long assumed that erosion and tectonic activity had erased Earth's craters so thoroughly that "you couldn't say anything about the craters on Earth at all," says planetary scientist Rebecca Ghent. So to figure out how much Earth was pummeled in the past, Ghent and her colleagues turned to the Moon.

"We can use our closest neighbor to learn a lot more about the Earth's history," says planetary scientist Sara Mazrouei, who worked on the study as a graduate student under Ghent at the University of Toronto.

With no atmosphere and no plate tectonics, the Moon's surface preserves a record of nearly all of its 4.5 billion years of craters. If the Moon sat through a hailstorm of impacts, Earth should have experienced the same storm, and therefore the same rate of cratering, the researchers argue. But without knowing how old most lunar craters are, it's unclear if the Earth and the Moon suffered impacts constantly or in short bursts.

Ghent realized in 2014 that the youngest craters on the Moon were surrounded by large rocks, debris excavated by the impact that formed the crater. Those large rocks absorb heat from the sun during the lunar day and radiate it back out at night in wavelengths of light visible to NASA's Lunar Reconnaissance Orbiter.

"Right away you could see the young craters popping out," Ghent says. Older craters, by contrast, were surrounded by rocks that had been beaten down to dust over time, so they didn't glow as brightly at night.

Ghent used nine craters whose ages were already known to figure out a mathematical relationship between a crater's nighttime glow and its age. Then Mazrouei, working by hand, mapped all 111 lunar craters less than a billion years old and wider than 10 kilometers in diameter, and used that map to figure out the cratering rate.

Most lunar scientists assumed that, after an early turbulent period of extreme bombardment more than 3 billion years ago, the Moon's impact rate has been mostly constant. "But we saw an increase," Mazrouei says—specifically, a jump in impacts by a factor of 2.6 around 290 million years ago.

The team then compared the lunar craters' sizes and ages with 38 of the largest and most stable craters on the Earth. They lined up almost exactly in their timing and sizes.

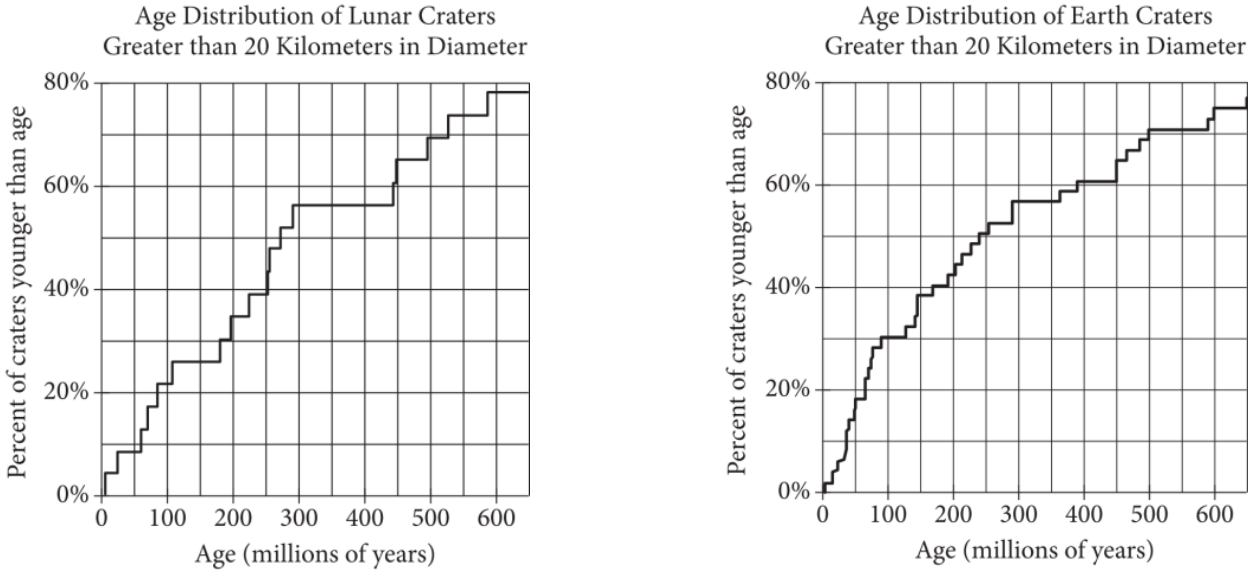
To double check that such large craters on Earth weren't often erased by erosion, the researchers looked at volcanic features called kimberlite pipes near the craters. These carrot-shaped lava tubes

change starkly in appearance when eroded. The kimberlite pipes that appeared on the same terrain as the large craters confirmed that very little of either feature had been lost to erosion, Ghent says.

The jump in the impact rate could have been caused by a smash-up in the asteroid belt sending debris toward the inner solar system, says coauthor William Bottke, a planetary scientist at the Southwest Research Institute in Boulder, Colorado. In 2007, Bottke linked one such asteroid break-up to the impact that killed the dinosaurs.

Ghent cautions against drawing conclusions about an exact date for that spike in impacts, noting it could have happened tens of millions of years earlier or later than estimated, or in multiple spurts. "I don't want people to say, 'Hey, the Permian-Triassic extinction happened during that time. This might have caused it.' We don't know that," she says.

The new finding offers an explanation for a gap in Earth's craters between 300 million and 650 million years old, Bottke says. "We don't see fewer craters because of erosion," he says. "We see fewer craters because the impact flux was lower."



Figures adapted from Sara Mazrouei et al., "Earth and Moon Impact Flux Increased at the End of the Paleozoic." ©2019 by American Association for the Advancement of Science.

22 Based on the passage, the team believed that their use of crater data from the Moon to draw conclusions about Earth was justified in part because

A. the rate of cratering on the Moon appears to have changed little over time.

B. similar numbers of craters have been preserved on the Moon and on Earth.

C. the probability of the Moon encountering impactors is approximately the same as that for the Earth.

D. Earth's atmosphere deflects or destroys a high proportion of potential impactors.

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

A. line 3-4 ("So to . . . Moon")

B. line 5-7 ("We can . . . Toronto")

C. line 8-9 ("With . . . craters")

D. line 9-10 ("If the . . . argue")

24 In context, the sentence in line 10-12 ("But without . . . bursts") mainly serves to

A. identify a problem that the team would need to solve before they could proceed with their study.

B. explain why the team would not be able to draw conclusions about Earth from features on the Moon.

C. summarize the consensus understanding of lunar cratering that the team challenged.

D. acknowledge that existing lunar maps appeared to contradict the team's hypothesis.

25 As used in line 11, "suffered" most nearly means

A. were disadvantaged by.

B. were subjected to.

C. had resisted.

D. had deteriorated under.

26 As used in line 17, "popping out" most nearly means

A. becoming apparent.

B. expanding upward.

C. exiting forcefully.

D. moving rapidly.

27 Based on the passage, the team trusts the results of the nighttime glow method, in part, because they also believe which of the following is true?

A. Lunar craters less than 10 kilometers in diameter have insufficient debris nearby to reliably determine their ages.

B. An absence of large rocks around a lunar crater can be explained by factors other than the crater's age.

C. The ages of some lunar craters could be reliably determined before the nighttime glow method was developed.

D. Craters on the Moon that were created early in its history have been almost entirely erased by subsequent bombardments.

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

A. line 17-19 ("Older . . . night")

B. line 20-21 ("Ghent . . . age")

C. line 21-23 ("Then . . . rate")

D. line 24-25 ("Most . . . constant")

29 The main purpose of the eleventh paragraph (line 37-40) is to

A. propose a future application of the team's methods.

B. rebut a possible criticism of the team's conclusions.

C. explain an apparent anomaly in the team's data.

D. preclude a potential unwarranted inference from the team's results.

30 According to figure 1, among the youngest 50% of lunar craters greater than 20 kilometers in diameter, the oldest that a crater could be is between

A. 200 and 300 million years old.

B. 300 and 400 million years old.

C. 400 and 500 million years old.

D. 500 and 600 million years old.

31 According to figure 2, among Earth's craters greater than 20 kilometers in diameter, the percentage that are younger than 550 million years old is closest to

A. 80%.

B. 70%.

C. 60%.

D. 50%.

32 Taken together, the figures best support which statement about craters greater than 20 kilometers in diameter on the Earth and the Moon?

A. The number of such craters is greater on the Earth than it is on the Moon.

B. The percentage of such craters under 100 million years old is greater on the Moon than on the Earth.

C. The Earth experienced a longer period with no change in the percentage of such craters than the Moon did.

D. The percentage of such craters that are younger than 250 million years old is greater on the Earth than on the Moon.

Questions 33-42 are based on the following passage.

This passage is adapted from Frederick Law Olmsted, "Preliminary Report upon the Yosemite and Big Tree Grove." Originally published in 1865. Olmsted, who designed well-known parks and college campuses across the United States, is considered to be the founder of American professional landscape architecture.

Line The severe and excessive exercise of the mind which leads to the greatest fatigue and is the most wearing upon the whole constitution is almost entirely caused by . . . interests beyond those of the moment, or of the individual; to the laying up of wealth, to the preparation of something, to accomplishing something in the mind of another, and especially to small and petty details which are uninteresting in themselves and which engage the attention at all only because of the bearing they have on some general end of more importance which is seen ahead.

In the interest which natural scenery inspires there is the strongest contrast to this. It is for itself and at the moment it is enjoyed. The attention is aroused and the mind occupied without purpose, without a continuation of the common process of relating the present action, thought or perception to some future end. There is little else that has this quality so purely. There are few enjoyments with which regard for something outside and beyond the enjoyment of the moment can ordinarily be so little mixed. The pleasures of the table are irresistibly associated with the care of hunger and the repair of the bodily waste. In all social pleasures and all pleasures which are usually enjoyed in association with the social pleasure, the care for the opinion of others, or the good of others largely mingles. In the pleasures of literature, the laying up of ideas and self-improvement are purposes which cannot be kept out of view. This, however, is in very slight degree, if at all, the case with the enjoyment of the emotions caused by natural scenery. It therefore results that the enjoyment of scenery employs the mind without fatigue and yet exercises it, tranquilizes it and yet enlivens it; and thus, through the influence of the mind over the body, gives the effect of refreshing rest and reinvigoration to the whole system.

Men who are rich enough and who are sufficiently free from anxiety with regard to their wealth can and do provide places of this needed recreation for themselves. They have done so from the earliest periods known in the history of the world, for the great men of the Babylonians, the Persians and the Hebrews, had their rural retreats, as large and as luxurious as those of the aristocracy of Europe at present. There are in the islands of Great Britain and Ireland more than one thousand private parks and notable grounds devoted to luxury and recreation. The value of these grounds amounts to many millions of dollars and the cost of their annual maintenance is greater than that of the national schools; their only advantage to the commonwealth is obtained through the recreation they afford to their owners (except as these extend hospitality to others) and these owners with their families number less than one in six thousand of the whole population.

The enjoyment of the choicest natural scenes in the country and the means of recreation

connected with them is thus a monopoly, in a very peculiar manner, of a very few, very rich people. The great mass of society, including those to whom it would be of the greatest benefit, is excluded from it. In the nature of the case private parks can never be used by the mass of the people in any country nor by any considerable number even of the rich, except by the favor of a few, and in dependence on them.

Thus without means are taken by government to withhold them from the grasp of individuals, all places favorable in scenery to the recreation of the mind and body will be closed against the great body of the people. For the same reason that the water of rivers should be guarded against private appropriation and the use of it for the purpose of navigation and otherwise protected against obstructions, portions of natural scenery may therefore properly be guarded and cared for by government. To simply reserve them from monopoly by individuals, however, it will be obvious, is not all that is necessary. It is necessary that they should be laid open to the use of the body of the people.

The establishment by government of great public grounds for the free enjoyment of the people under certain circumstances, is thus justified and enforced as a political duty.

33 Throughout the passage, Olmsted develops which claim about natural spaces?

A. Private landowners are better equipped financially to maintain preserved spaces than government is.

B. Government should play a more prominent role in protecting natural parks from overuse by the public.

C. Increased access to undeveloped nature is needed to improve the well-being of a nation's citizens.

D. Keeping a significant percentage of land in its natural state connects people to a nation's agrarian past.

34 Which choice best supports the idea that Olmsted believes that many activities people find gratifying are also burdened with obligations?

A. line 7 ("In the interest . . . this")

B. line 8-10 ("The attention . . . end")

C. line 10-12 ("There . . . mixed")

D. line 13-15 ("In all . . . mingles")

35 Olmsted's use of similar phrases containing "and yet" (line 18) mainly serves to

A. emphasize the problems caused by conflicting opinions about property ownership.

B. debunk the apparent contradiction of preserving the wilderness while opening it up for public use.

C. convey the paradoxical quality of the effect that gazing at natural beauty has on human beings.

D. promote the utility of spending time in nature for both recreational and educational purposes.

36 Based on the passage, Olmsted would most likely agree with which claim about the very wealthy of his time?

A. They are traditionally reluctant to purchase and invest in natural lands that offer little financial gain in return.

B. They often turn to natural scenery when the stress caused by financial burdens becomes overwhelming.

C. They have shown that sharing their private natural lands with the common people provides benefits to the entire society.

D. They accumulate private property because they derive the same benefit from nature that the less wealthy do.

37 In the passage, Olmsted indicates that the human tendency to seek out expanses of nature

A. is the cause of a recent fashion trend popular among the wealthy.

B. reinforces the belief that recreational pursuits should be financed by the aristocracy.

C. is an enduring trait, as proved by historical precedents.

D. inspires a collective unity, since landowners must support communal interests.

38 As used in line 24, "retreats" most nearly means

A. havens.

B. withdrawals.

C. concealments.

D.evasions.

39 The passage most strongly implies that Olmsted believes private parks have historically

A. improved the general physical health of the population regardless of who used them.

B. consumed more financial resources than can be justified by their relative benefit to society.

C. developed an increasingly sophisticated and luxurious style over the centuries.

D. enabled the relaxation of social hierarchies when they became open to the public.

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

A. line 22-25 ("They . . . present")

B. line 26-30 ("The value . . . population")

C. line 37-39 ("Thus . . . people")

D. line 39-42 ("For the . . . government")

41 As used in line 29, "extend" most nearly means

A. offer.

B. increase.

C. protrude.

D. enlarge.

42 Olmsted's repetition of the word "very" (line 32) mainly serves to

A. convey his surprise about the emergence of an unusual land distribution pattern.

B. underscore his opinion that the wealthy have an eccentric attitude regarding nature parks.

C. reinforce the common belief that nature is most accessible in rural areas.

D. emphasize that access to scenic areas has become an exclusive privilege.

Questions 43-52 are based on the following passages.

Passage 1 is adapted from Brandon Specktor, "Earth's Soil Is Hyperventilating thanks to Climate Change." ©2018 by Purch. Passage 2 is adapted from Kiona Ogle, "Microbes Weaken Soil Carbon Sink." ©2018 by Springer Nature Limited.

Line

Passage 1

Dirt doesn't actually breathe, of course, but it sort of looks that way when tiny, underground organisms help release the carbon dioxide (CO_2) stored in plant roots, dead leaves and other natural detritus. Hungry microbes gorge on the tasty carbon stored in this plant matter, and then release carbon dioxide as a natural byproduct of this feeding, just as you do when you exhale after a deep breath.

This process is known as "soil respiration," and it's an important complement to photosynthesis—the process by which plants turn CO_2, water and light into energy—helping to keep ecosystems around the world running smoothly.

But lately, researchers have found that as global temperatures rise, microbes in the soil have been releasing CO_2 faster than plants can snatch it up again. Previous studies have indicated that tree roots and certain microbes both respire more frequently at higher temperatures (up until a certain point, when the intense heat causes the organisms to stop functioning completely). But the exact effects of that increase in respiration had never been studied on a global scale until now.

To better understand the potential links between rising global temperatures and soil respiration, a team of researchers led by Ben Bond-Lamberty at the Joint Global Change Research Institute at the University of Maryland, College Park, examined data from two huge global nature surveys: the Global Soil Respiration Database and FLUXNET, which collectively draw soil, temperature, rainfall and other data from a network of more than 2,000 sources across several ecosystems.

The data showed that the rate of global soil respiration had increased by about 1.2 percent in the 25-year window between 1990 and 2014. Most of that growth was due to increased microbial action; the tiny creatures in Earth's soil are freeing more and more greenhouse gases from our planet's surface.

While a 1.2 percent increase might not seem significant on its face, the researchers made it clear that even a modest change like this represents a "massive" ecosystem shift over a relatively short time. And while the full effects of this microbial huffing and puffing are hard to estimate, it's possible that all that extra CO_2 will feed a self-intensifying loop of atmospheric warming and soil respiration over the years to come.

Passage 2

If Bond-Lamberty and colleagues' findings are correct, which mechanisms could explain the markedly enhanced stimulation of the activity of soil microbes relative to plant productivity and plant respiration? Studies in the past few years have shown that the ability of plants to downregulate respiration in response to long-term increases in temperature is much greater than that of short-lived soil microbes. The authors suggest that the increased microbial activityobserved in their study probably reflects the stimulatory effects of elevated temperatures associated with climate change.

There are, however, potential issues when drawing global inferences from the data analysed by Bond-Lamberty and co-workers. Most of the data came from spot measurements of soil-respiration rates that were obtained by many different researchers, who used a variety of methods to work out the contributions of soil microbes. This diversity of methods might have led those researchers to come to contrasting conclusions about the relative importance of soil microbes in their studies. Moreover, Bond-Lamberty *et al.* used simplifying assumptions to translate hourly or daily snapshots of respiration rates into annual fluxes of CO_2, but did not take into account the uncertainty in these calculations. The soil-respiration data set is also limited in its temporal coverage of individual sites: repeated observations were available for only a handful of sites, yet recurrent observations are necessary to prevent temporal trends from being obscured by factors that vary between sites.

The authors acknowledge and account for some of these limitations in their statistical analyses, but clearly there is room for a more rigorous investigation.This would require researchers to gather continuous time series of soil respiration and its component fluxes, and demands the use of precise methods for quantifying uncertainty and for extrapolating local measurements to determine trends in larger regions. Despite the limitations, Bond-Lamberty and colleagues' work is valuable because it aids our understanding of soil's long-term potential for sequestering carbon.

43 Over the course of Passage 1, the main focus shifts from

A. an explanation of a process to a discussion of research aimed at exploring how global temperature increases may affect that process.

B. a hypothesis about how global temperatures drive a process to a study designed to test that hypothesis.

C. a presentation of two sides of a debate about the effects of global temperature on a process to a summary of evidence in support of one side of that debate.

D. a review of previous research regarding the gradual development of a process to a consideration of the future implications of sudden changes to that process.

44 Which choice from Passage 1 best supports the idea that certain organisms cannot survive in extreme environmental conditions?

A. line 2-4 ("Dirt . . . detritus")

B. line 4-6 ("Hungry . . . breath")

C. line 11-13 ("Previous . . . completely")

D. line 13-14 ("But . . . now")

45 Passage 1 indicates that the balance observed in the typical relationship between soil respiration and photosynthesis

A. increases the amount of carbon dioxide that is released into the air.

B. depends primarily on the number of microbes that survive in soil.

C. is necessary to stabilize sudden instances of dangerously severe weather patterns.

D. has been disrupted by an overall rise in global temperatures.

46 The first paragraph of Passage 2 (line 30-35) mainly serves to

A. acknowledge an important discovery that will be contextualized in the passage.

B. summarize an assumption that will be elaborated on in the passage.

C. discuss the conclusions of a study that will be analyzed in the passage.

D. emphasize a lack of consensus that will be ultimately reconciled in the passage.

47 As used in line 34, "observed" most nearly means

A. remembered.

B. preserved.

C. attended.

D. detected.

48 As used in line 41, "translate" most nearly means

A. convert.

B. define.

C. explain.

D. reword.

49 Which choice best states the relationship between the passages?

A. Passage 2 underscores the importance of the research conducted in Passage 1.

B. Passage 2 echoes a concern put forth by the researchers featured in Passage 1.

C. Passage 2 offers an alternative explanation for the findings presented in Passage 1.

D. Passage 2 raises doubts about the accuracy of the conclusions described in Passage 1.

50 It can reasonably be inferred from Passage 2 that its author considers the "2,000 sources across several ecosystems" noted in line 19, Passage 1 to

A. demonstrate a clear point of comparison between local and global data.

B. provide evidence that has been later proved by scientists to be unreliable.

C. represent a major advance over all previous studies of soil respiration.

D. reflect different experimental approaches that are not necessarily consistent with one another.

51 Which choice from Passage 2 provides the best evidence for the answer to the previous question?

A. line 36-37 ("There . . . co-workers")

B. line 39-40 ("This . . . studies")

C. line 40-43 ("Moreover . . . calculations")

D. line 50-51 ("Despite . . . carbon")

52 The author of Passage 1 would likely consider the statement in line 34-35, Passage 2 ("The authors . . . change") to be

A. an accurate summary of Bond-Lamberty and colleagues' conclusions regarding an environmental process.

B. a logical interpretation of Bond-Lamberty and colleagues' analysis of microbial life spans.

C. a general reflection of Bond-Lamberty and colleagues' investigation concerning carbon storage.

D. an objective review of Bond-Lamberty and colleagues' research into atmospheric conditions.

SECTION 2: WRITING

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

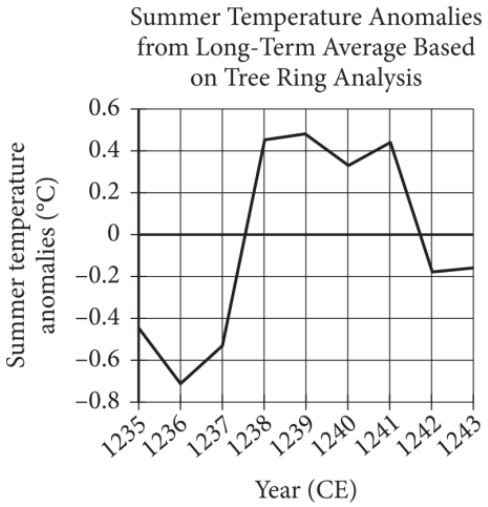
The Mongol Army Takes a Rain Check

The Mongol Army Takes a Rain Check

[1] In the summer of 1242, on the brink of conquering the Kingdom of Hungary in Central Europe, the powerful Mongol military suddenly retreated to Russia. [2] The motive for this strange withdrawal is not explained in written records, **1** so some historians have asserted that it resulted from instability in Mongol politics. [3] Other scholars claim that the invaders simply decided that a full conquest would not be worth the trouble. [4] A recent study of tree ring data from Eastern and Central Europe by researchers Ulf Büntgen and Nicola Di Cosmo **2** present a compelling case that **3** unassertive yet powerful changes in weather patterns played an essential role in this historic event. **4**

The Mongol army, due to its dependence on **5** expeditious and ambulatory horse cavalry, was particularly susceptible to weather conditions. Warm, dry weather helped the army expand, producing smooth grasslands for the horses to both charge across and graze upon. **6** On the other hand, cold weather with a sufficient amount of precipitation could cause marshy terrain, which would make it difficult for the horses to move and would ruin any potential harvest needed to feed soldiers and horses.

Through analysis of interior tree ring growth patterns, Büntgen and Di Cosmo were able to study the weather patterns at the time and place of the Mongol invasion, and the researchers discovered subtle weather anomalies that **7** corresponded to the army's advance and retreat. From 1238 to 1241, which includes the year of the invasion and the years leading up to it, the region saw **8** above-average temperatures and decreased precipitation. **9** Before 1237, for instance, summer temperatures were about 0.5 degree above average. However, in 1242, the year of the withdrawal, this trend reversed, with precipitation increasing and temperatures dropping to as low as approximately 0.2 degree below average. This area of western Hungary was already notorious for flooding due to thawing winter snows, so the cold, rainy summer of 1242 would almost guarantee that the Mongols had to contend with swamped land.



Adapted from Ulf Büntgen and Nicola Di Cosmo, "Climatic and Environmental Aspects of the Mongol Withdrawal from Hungary in 1242 CE." ©2016 by Ulf Büntgen and Nicola Di Cosmo.

Büntgen and Di Cosmo's use of tree ring **10** analysis, shows how even minor weather anomalies would have likely forced the Mongols to retreat from Hungary. While this explanation does not disqualify the possibility of other popular **11** theories. It fosters a more complete understanding of this major historical event. Additionally, this information provides researchers with a model for how to examine the ways weather may have impacted other important moments in history.

1

A. NO CHANGE

B. nevertheless,

C. but

D. DELETE the underlined portion.

2

A. NO CHANGE

B. presents

C. have presented

D. are presenting

3

A. NO CHANGE

B. plain

C. compliant

D. modest

4 The writer wants to add the following sentence to the paragraph.

While these explanations may hold some truth, one factor likely played a larger role in the Mongol retreat than has previously been recognized: the weather.

The best placement for the sentence is

A. after sentence 1.

B. after sentence 2.

C. after sentence 3.

D. after sentence 4.

5

A. NO CHANGE

B. quick and mobile

C. speedy and zippy

D. super fast and nimble

6

A. NO CHANGE

B. For example,

C. Be that as it may,

D. Therefore,

7

A. NO CHANGE

B. coordinated for

C. correlated in

D. coexisted at

8 Which choice most accurately represents the data in the graph?

A. NO CHANGE

B. below-average temperatures

C. average temperatures

D. no changes in temperature

D. an impressive sign of her husband's achievements in Argentina.

9 Which choice provides accurate information from the graph?

A. NO CHANGE

B. In 1239,

C. In 1240,

D. After 1241

10

A.
NO CHANGE
B.
analysis shows, how
C.
analysis, shows how:
D.
analysis shows how

11

A.
NO CHANGE
B.
theories, but it
C.
theories, and it
D.
theories, it

Questions 12-22 are based on the following passage.

Evanescent Art

Many of the world's most famous works of art, such as Leonardo da Vinci's *Mona Lisa* and Johannes Vermeer's *Girl with a Pearl Earring*, 12 were created centuries ago and are esteemed for their timeless appeal. However, not all art is meant to last. Some pieces, in fact, gain much of their significance from the fact that they were never intended to be permanent—either because they rely on temporary features or 13 because they are utilizing ephemeral materials. For 14 them, transience is essential to their aesthetic power.

Many works of temporary art, which often focus more on ideas than on traditional artistic techniques, rely on change for their effect. The use of organic substances to explore existential 15 concepts such as the ephemeral and cyclical nature of life, is one example of this tendency. For instance, conceptual artist Yoko Ono designed the exhibit *Apple*—a real apple displayed on a clear Plexiglas pedestal—to 16 aggressively suggest such ideas. Over the course of several weeks, the apple, which started out fresh and shiny green, gradually shriveled up before it eventually was replaced by a new apple and the process repeated itself. 17 This new apple would likewise remain on display until it had fully decomposed. As Ono described the work, which was first displayed in London in 1966 and was later included in a retrospective of her work at New York's Museum of Modern Art in 18 2015. "There is the excitement of the apple decomposing, and then the decision whether or not to replace it, of just thinking of the beauty of the apple after it's gone."

[1] Like Ono, Brazilian sculptor Néle Azevedo has experimented with transient materials to achieve her aesthetic goals. [2] Azevedo's work *Minimum Monument*, which 19 is beginning in 2005, involves her traveling to cities around the world, such as Birmingham, United Kingdom, and Lima, Peru, and, aided by locals, placing hundreds of tiny human ice sculptures at historical landmarks. [3] They evoke the forgotten lives and history behind the cultural monuments, and, as the artist reflects, their temporary life span helps communicate this message: "In the place of the hero, the anonym; in the place of the solidity of the stone, the ephemeral process of the ice; in the place of the monument scale, the minimum scale of the perishable bodies." 20

As Ono's and Azevedo's pieces indicate, 21 works of art are subject to actual physical processes. Those processes can be key to their impact. Despite their apparent evanescent nature, these works of art convey substantial ideas that artists and art lovers alike have grappled with throughout history and that 22 will persist as those same individuals continue to seek out new ways to experience art.

12 Which choice most effectively sets up the main discussion in the paragraph?

A. NO CHANGE

B. are kept in museums where they can be seen by countless visitors.

C. are considered cultural touchstones and are studied by scholars and historians.

D. were housed in private collections before being displayed publicly.

13

A. NO CHANGE

B. because they utilize

C. by utilizing

D. will utilize

14

A. NO CHANGE

B. these artists,

C. these characteristics,

D. these artworks,

15

A. NO CHANGE

B. concepts, such as the ephemeral and cyclical nature of life

C. concepts, such as the ephemeral and cyclical nature, of life,

D. concepts such as the ephemeral and cyclical nature of life

16

A. NO CHANGE

B. outrageously

C. provocatively

D. exasperatingly

17 The writer is considering deleting the underlined sentence. Should the sentence be kept or deleted?

A. Kept, because it provides relevant details about Ono's aesthetic choices in designing Apple.

B. Kept, because it clarifies the symbolic significance of the apple in Ono's body of work.

C. Deleted, because it provides a detail about Apple's composition that is unrelated to the paragraph's main focus.

D. Deleted, because it unnecessarily repeats information about the exhibition of Apple that is stated earlier.

18

A. NO CHANGE

B. 2015,

C. 2015;

D. 2015, saying

19

A. NO CHANGE

B. begins

C. would have begun

D. began

20 The writer wants to add the following sentence to this paragraph.

These ice sculptures are left to melt and are meant to contrast with the permanence of the monuments on which they are placed.

The best placement for the sentence is

A. before sentence 1.

B. after sentence 1.

C. after sentence 2.

D. after sentence 3.

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

A. the actual physical processes that works of art undergo can be key to their impact.

B. when works of art undergo actual physical processes, those processes can be key to their impact.

C. works of art have impacts, and actual physical processes are key to them.

D. the key to their impact, for works of art, can be the actual physical processes that they undergo.

22 Which choice provides the most effective conclusion to the passage?

A. NO CHANGE

B. will live on in the minds of viewers long after the physical artifacts created by the artists are gone.

C. demonstrate that there is no single, monolithic vision of an effective artistic practice.

D. show that the significance of a work of art can derive from many factors, including how it was made and how many people get to observe it.

Questions 23-33 are based on the following passage.

Rubin and Ford Discover Dark Matter

In 1965 astronomer Vera Rubin took a job at the Carnegie Institution of Washington. There she met fellow astronomer Kent Ford, who had created a spectrograph—an instrument that separates light into a frequency spectrum—that was capable of amplifying the spectra of a galaxy's **23** dreary outer regions. Up to that point, telescopes **24** can observe the spectra of only the dense inner parts of galaxies. "Lots of people were working on the centers of galaxies, but I got curious about the outsides," Rubin said. The telescope-mounted spectrograph gave her a chance to pursue **25** the interest that she had in galaxies. Then, she and Ford put the tool to use in studying the outer areas of galaxies. For two years, they traveled between the Lowell Observatory in Flagstaff, Arizona, and the Kitt Peak National Observatory in the Arizona-Sonoran **26** Desert, they measured the stars on the outskirts of the Andromeda galaxy 2.5 million light-years away.

They expected to find that movement within galaxies is like that in solar systems. In our solar system, the outer planets move more slowly than the inner planets because most of the mass of the solar system is concentrated at its center, in the Sun. Gravitational force weakens with distance, so it has less **27** effect on the motion of an outer planet than it does on that of an inner planet. **28** Subsequently, in galaxies, most of the visible mass is clustered in the center, so stars farther away from the center would be expected to move more slowly than stars closer to the center.

29 Eventually, Rubin and Ford would expand their research to more galaxies. They observed that stars maintained stable orbits of about the same speed no matter how close **30** it was to the center of the galaxy. This observation could be accounted for by the presence of additional mass in the form of matter that was not concentrated at the center but rather extended throughout the entire galaxy. Rubin and Ford saw no such matter, but they were aware of theories proposing the existence of matter that could not be seen because it was nonluminous. **31** After considering and excluding other possible explanations for what they had observed, Rubin and Ford hypothesized that they had found new evidence of the existence of this matter, known as dark matter.

Rubin and Ford published their findings in 1970. **32** Their work was initially met with skepticism but is regarded today as a landmark contribution to **33** astronomy; the first discovery of data that were difficult to explain without the existence of dark matter. It is now widely accepted that as much as 90 percent of the mass of the universe is dark matter, and this shift in astronomical thinking can be credited in part to Ford's technological innovation and Rubin's decision to explore the galaxy's edges.

23

A. NO CHANGE

B. monotonous

C. dim

D. weak

24

A. NO CHANGE

B. can be observing

C. could observe

D. will be able to observe

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

A. this interest, and she and Ford put the tool to use in studying

B. it, and she and Ford put the tool to use in studying

C. this interest that she described; using the tool, she and Ford studied

D. the interest that she had, so afterward she and Ford used it to study

26

A. NO CHANGE

B. Desert, measuring

C. Desert. Measuring

D. Desert; and measured

27

A. NO CHANGE

B. affect on

C. affect for

D. effect for

28

A. NO CHANGE

B. On the other hand,

C. Likewise,

D. Nevertheless,

29 Which choice provides the best transition from the previous paragraph to the information that follows?

A. NO CHANGE

B. To their surprise, Rubin and Ford found this not to be the case.

C. Rubin and Ford focused on galaxies that were relatively isolated in space.

D. Before this project, Rubin and Ford had studied quasars, which were discovered in 1960.

30

A. NO CHANGE

B. it has been

C. they will be

D. they were

31 Which choice best sets up the information that follows in the sentence?

A. NO CHANGE

B. Since they had studied a galaxy well known to most astronomers,

C. Before addressing the question of why matter behaved this way,

D. Though subsequent theorists have argued that these findings mean that Einstein's theory of general relativity needs to be modified,

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

The work appeared in a journal that was founded in 1895 by two American astronomers.

Should the writer make this addition here?

A. Yes, because it provides historical context that supports the discussion of Rubin and Ford's work.

B. Yes, because it introduces a scientific topic that is elaborated on later in the paragraph.

C. No, because it does not include enough information about the content of Rubin and Ford's published findings.

D. No, because it deviates from the focus of the paragraph by providing tangential details about a journal.

33

A. NO CHANGE

B. astronomy the

C. astronomy: the

D. astronomy. The

Questions 34-44 are based on the following passage.

The Sweet Smell of Success

[1] "Fragrance is present in every aspect of our lives," says Rocio Arellano, a director of fragrance development at consumer product company Colgate-Palmolive. [2] From the aromas that lure us into stores to the smells that reward our housecleaning efforts, fragrances affect our perceptions and behaviors. [3] In fact, the marketing plan for Gain laundry detergent relies almost exclusively on the appeal of the product's variety of fragrances—including such proprietary scents as "Apple Mango Tango"—to ensure successful advertising results. [4] These scents are the creation of fragrance chemists, professionals who develop fragrances for consumer goods such as cleaning products, cosmetics, and air fresheners. **34**

Creating a product with a pleasing smell is an arduous process that can take years. At Colgate-Palmolive, Arellano and her team **35** work with outside partners—fragrance houses—to formulate new scents for products in development. The fragrance **36** houses chemists, many of whom have earned a graduate degree in chemistry or a related **37** field and use advanced laboratory tools such as gas chromatographers that separate and analyze fragrance components. **38** Those studying to be fragrance chemists must also acquire the ability to communicate with nonscientists. The fragrances they develop can include up to 1,500 chemicals, **39** although they must understand how those chemicals interact and identify satisfying combinations. They also rely on **40** its knowledge of which scents will dissipate quickly and which will linger. Once the fragrance house has delivered the new fragrance, Colgate-Palmolive's in-house chemists examine it and perform consumer **41** testing. The chemists perform this testing in order to have the ability to make a decision regarding whether it works for the product being developed.

Developing scents for consumer products requires more than mastery of chemical compounds and laboratory methods, however. Fragrance chemists are often expected to develop new fragrances that evoke particular emotions, such as feelings of happiness or nostalgia, but research has shown that various markets respond differently to the same scent. For instance, **42** in the United Kingdom, many people find the smell of baby powder easier to identify than the smell of lemon. Such cultural differences mean that successful fragrance chemists need knowledge of a product's intended customers in addition to their scientific and technical skills.

43 Meanwhile, designing scents that appeal to consumers is similar to crafting a symphony, as master perfumer Michael Papas explains. A composer uses musical notes to create an auditory **44** symphony a fragrance chemist uses fragrant notes to create an olfactory symphony.

34 The writer wants to add the following sentence to the paragraph.

Businesses know and use this to sell their products.

The best placement for the sentence is

A. before sentence 1.

B. after sentence 2.

C. after sentence 3.

D. after sentence 4.

35

A. NO CHANGE

B. collaborate and work with outside partners—

C. work with external partners from outside the company—

D. team up and work with external, non-Colgate-Palmolive partners—

36

A. NO CHANGE

B. houses' chemists',

C. houses' chemists,

D. houses chemist's,

37

A. NO CHANGE

B. field. They

C. field,

D. field; moreover, they

38 Which choice provides a second supporting example that is most similar to the example in the previous sentence?

A. NO CHANGE

B. This equipment is also used by fragrance chemists who work in the designer perfume industry.

C. Some fragrance chemists will also conduct research to help companies reduce the cost of manufacturing scents.

D. The chemists may also use 3D modeling software to simulate and view molecular structures.

39

A. NO CHANGE

B. so

C. of which

D. DELETE the underlined portion.

40

A. NO CHANGE

B. one's

C. our

D. their

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

A. testing to decide

B. testing, which will thus give them the ability to decide

C. testing, so they are able to decide

D. testing to come to a decision as to

42 Which choice best supports the claim in the previous sentence about how markets respond to scents?

A. NO CHANGE

B. brain scans of individuals from Great Britain, France, and Germany indicate that the smell of chocolate may be relaxing across all cultures.

C. because employees are energized by the smell of peppermint, employers may be able to improve productivity by wafting this scent throughout the office.

D. whereas in the United States and Germany citrus fragrance is perceived as invigorating, in France it is deemed relaxing.

43

A. NO CHANGE

B. Regardless,

C. Otherwise,

D. DELETE the underlined portion, adjusting the capitalization as needed.

44

A. NO CHANGE

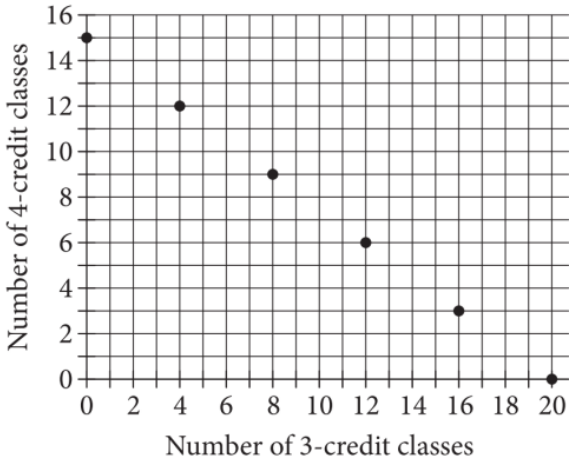
B. symphony;

C. symphony:

D. symphony,

MATH-SECTION 3: NO CALCULATOR

1



The graph shown represents the possible combinations of 3-credit and 4-credit classes a student can enroll in to complete an associate's degree program. Based on the graph, if a student enrolls in eight 3-credit classes, how many 4-credit classes will the student need to enroll in to complete this program?

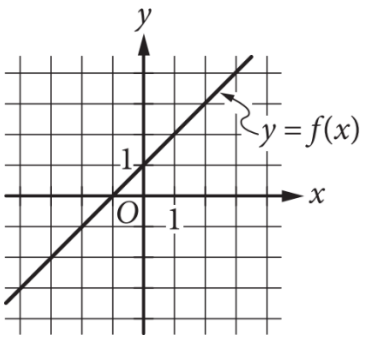
A. 3

B. 8

C. 9

D. 16

2



The graph of the linear function f is shown. Which equation defines f ?

A. $f(x)=x+1$

B. $f(x)=x-1$

C. $f(x)=-x+1$

D. $f(x)=-x-1$

3

The graph of the polynomial function *f*, where $y = f(x)$, has x-intercepts of (-6, 0) and (6, 0). Which of the following must be true?

A. $f(-6) = 0$

B. $f(6) = -6$

C. $f(-6) = 6$

D. $f(0) = -6$

4

$$y=4x+6$$
$$-5x-y=21$$

What is the solution (x,y) to the given system of equations?

A. $(-3,-6)$

B. $\left(-\frac{5}{3},-\frac{2}{3}\right)$

C. $(3,18)$

D. $(15,66)$

5

$$|x-10|=0$$

What are all possible solutions to the given equation?

A. -10

B. 0

C. 10

D. -10 and 10

6

$q = s(r-1)^2$

The given equation relates the positive numbers q, r, and s.

Which equation gives r in terms of q and s, when $r > 1$?

A. $r = 1 + \sqrt{\frac{q}{s}}$

B. $r = 1 + \frac{\sqrt{q}}{s}$

C. $r = -1 - \sqrt{\frac{q}{s}}$

D. $r = -1 - \frac{\sqrt{q}}{s}$

7

In the relationship between variables x and y, each increase of 1 in the value of x decreases the value of y by 2. When $x = 0$, $y = 5$. Which equation represents this relationship?

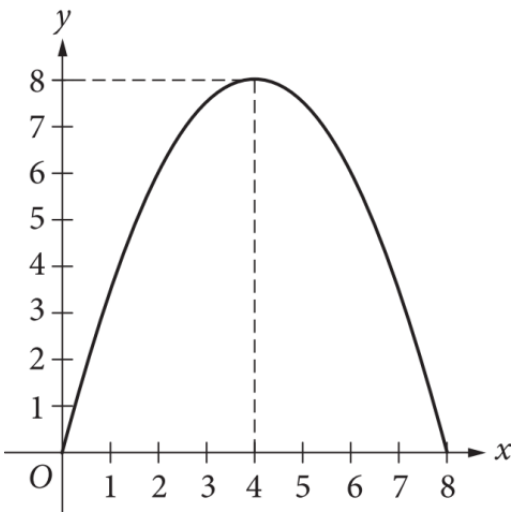
A. $y = -\frac{1}{2}x + 5$

B. $y = -\frac{1}{2}x - 5$

C. $y = -2x - 5$

D. $y = -2x + 5$

8



An architect is asked to construct an opening in a wall in the shape of a parabola. The blueprint of the architect's design is shown. The formula

$$y = \frac{-x(x-8)}{k}$$

where k is a constant, can be used to determine the height y, in feet, of the opening at a horizontal distance of x feet from the left side of the opening. Based on the architect's blueprint, what is the value of k ?

A. 4

B. 2

C. $\frac{1}{2}$

D. $\frac{1}{4}$

9

An isosceles right triangle has a hypotenuse of length 4 inches.

What is the perimeter, in inches, of this triangle?

A. $2\sqrt{2}$

B. $4\sqrt{2}$

C. $4 + 4\sqrt{2}$

D. $4 + 8\sqrt{2}$

10 How many solutions does the equation $4(x-2)=-2(x+4)$ have?

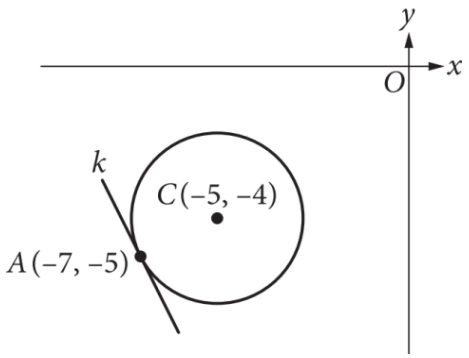
A. Zero

B. Exactly one

C. Exactly two

D. Infinitely many

11



Line k is tangent to the circle with center C at point A, as shown. What is the slope of line k ?

A. -2

B. $-\frac{1}{2}$

C. $\frac{1}{2}$

D. 2

12 $R(t)=1{,}830-790(2.71)^{-.18t}$

The function R gives the predicted average rating, expressed as a number of points, in the German chess federation database for a player based on the number of years, t, the player has participated in professional chess tournaments. Which of the following represents the predicted average rating of a player who has just entered their first professional chess tournament?

A. $R(-0.18)$

B. $R(0)$

C. $R(790)$

D. $R(1{,}830)$

13 Alice took 60 minutes to complete a task on her first trial. The time it took Alice to complete the task decreased by 10% of the previous time for each additional trial. Approximately how many minutes will it take Alice to complete the task on her fifth trial?

A. 50

B. 42

C. 39

D. 35

14 $y<\frac{2}{5}x+3$

$y>\frac{1}{2}x-6$

In which of the following tables are all the values of x and their corresponding values of y solutions to the system of inequalities shown?

A.

x	y
−2	−8
0	−4
4	4

B.

x	y
−2	−8
0	4
4	4

C.

x	y
−2	3
0	2
4	−3

D.

x	y
−2	2
0	−3
4	3

15

Which of the following is equivalent to $(\sqrt{32})(\sqrt[5]{64})$?

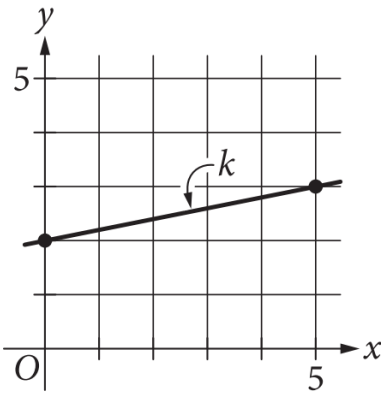
A. $6(\sqrt[7]{2^5})$

B. $6(\sqrt[10]{2^7})$

C. $8(\sqrt[7]{2^5})$

D. $8(\sqrt[10]{2^7})$

16



Line *k* is shown in the *xy*-plane. Line *j* (not shown) is parallel to line *k*. What is the slope of line *j* ?

17

The expression $\frac{32x^6}{4x^3}$ is equivalent to cx^d, where *c* and *d* are constants and $x > 0$. What is the value of $c+d$?

18

$2.1(h+3) = 3h + 2.1$

What value of *h* is the solution to the given equation?

19

A cylinder and a sphere both have the same radius *r*, where $r > 0$. The cylinder has a height of 16. The volume of the sphere is half the volume of the cylinder. What is the value of *r* ?

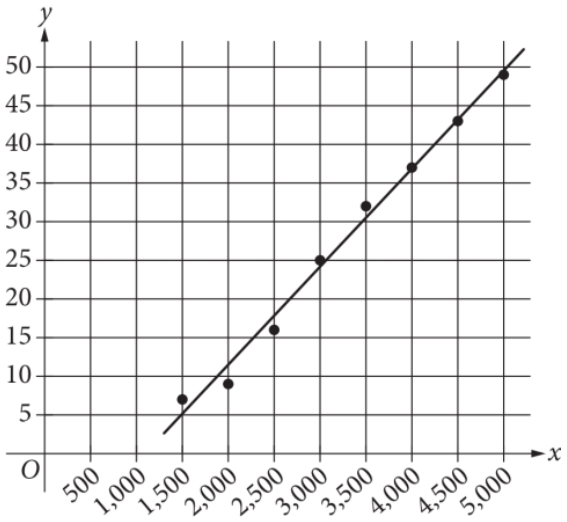
20

$x^2 + bx + c = 0$

In the given equation, *b* and *c* are constants. If $-b + \sqrt{b^2 - 4c} = 18$ and $-b - \sqrt{b^2 - 4c} = 10$, what is one possible value of *x* ?

MATH-SECTION 4: CALCULATOR

1



Eight data points are shown in the scatterplot. A line of best fit for the data is also shown. Which of the following is closest to the *y*-value predicted by the line of best fit for an *x*-value of 3,700 ?

A. 40

B. 33

C. 20

D. 14

2

An object has a mass of 3,300 milligrams. What is the mass of the object in grams? (1 gram = 1,000 milligrams)

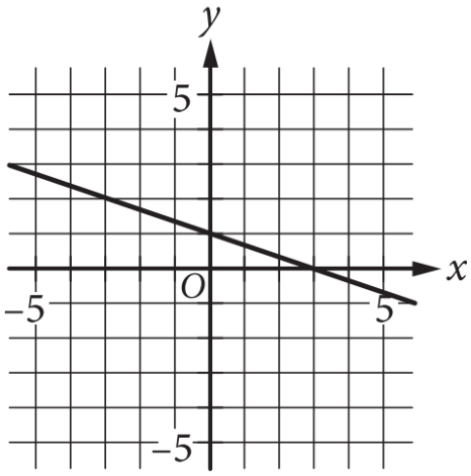
A. 0.33

B. 3.30

C. 33.00

D. 330.00

3



What is the *y*-intercept of the line graphed?

A. $(0,-3)$

B. $(0,-1)$

C. $(0,1)$

D. $(0,3)$

4

On average, one square inch of human skin contains 650 sweat glands. A certain area of skin contains 1,170 sweat glands. Based on this information, which of the following is closest to the size of this area, in square inches?

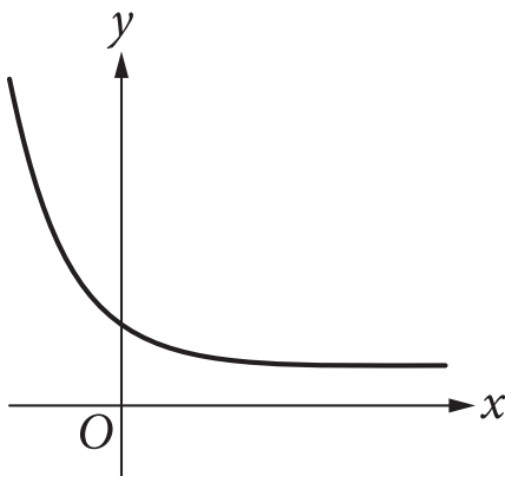
A. 0.44

B. 0.56

C. 0.80

D. 1.80

5



The graph of the function t is shown, where $y = t(x)$. Which of the following types of functions is graphed?

A. Increasing linear

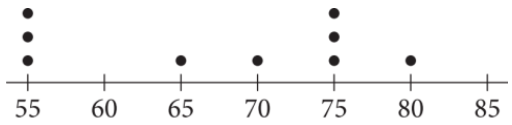
B. Decreasing linear

C. Increasing exponential

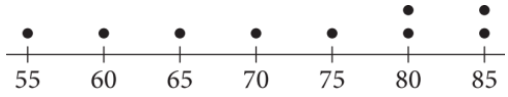
D. Decreasing exponential

6 Which of the following dot plots, each with 9 data values, represents a data set with a median value that is less than 70?

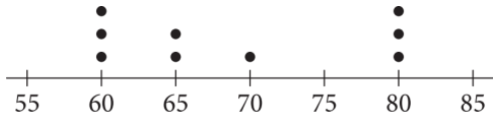
A.



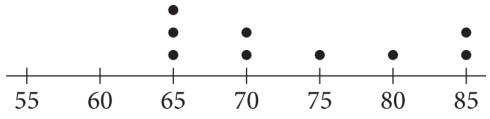
B.



C.



D.



Questions 7 and 8 refer to the following information.

The tables give the heights, in feet, of 5 peaks in the Rocky Mountains and 5 peaks in the Appalachian Mountains.

Rocky Mountain Peak	Height (in feet)
Mount Elbert	14,439
Mount Massive	14,429
Mount Harvard	14,419
Blanca Peak	14,350
La Plata Peak	14,343

Appalachian Mountain Peak	Height (in feet)
Mount Mitchell	6,684
Mount Craig	6,647
Clingman's Dome	6,643
Mount Guyot	6,621
Balsam Cone	6,611

7 What is the height, in meters, of Blanca Peak? (Use 1 meter = 3.28 feet.)

A. 437.5

B. 4,375

C. 47,045

D. 47,068

8 For the given Appalachian Mountain peaks, the height of the highest peak is approximately what percent greater than the height of the lowest peak?

A. 1.1%

B. 9.9%

C. 73.0%

D. 101.1%

9

Data set A: 2, 4, 6, 6, 8, 12
Data set B: 2, 4, 6, 6, 8, 12, 26

Two data sets are shown. Which statement best compares the medians of the data sets?

A. The median of data set A is greater than the median of data set B.

B. The median of data set A is less than the median of data set B.

C. The medians of data sets A and B are equal.

D. There is not enough information to compare the medians.

10 $0.79x + 1.0y = 100$

The mass of a solution of isopropanol and water is 100 grams. The given equation represents this situation, where x is the volume of isopropanol, in cubic centimeters, and y is the volume of water, in cubic centimeters. If the volume of isopropanol is 70 cubic centimeters, what is the approximate volume of water, in cubic centimeters?

A. 45

B. 55

C. 70

D. 79

11

There are 435 voting members of the US House of Representatives. If b voting members are in favor of a certain bill, which expression represents the percentage of the voting members in favor of the bill?

A. $100\left(\frac{b}{435}\right)$

B. $100\left(\frac{435}{b}\right)$

C. $435\left(\frac{b}{100}\right)$

D. $435(100b)$

12 $10(x + 120) = 120$

Which of the following equations has the same solution as the given equation?

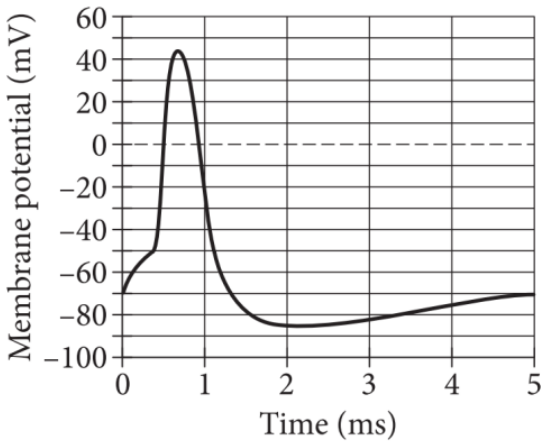
A. $x + 120 = 12$

B. $x + 120 = 130$

C. $x + 12 = 12$

D. $x + 12 = 120$

13



The graph shows the change over time, in milliseconds (ms), in a neuron's membrane potential, in millivolts (mV), during an electrical brain signal known as an action potential. At which of the following times, in ms, is the membrane potential closest to negative 70 mV?

A. 2

B. 3

C. 4

D. 5

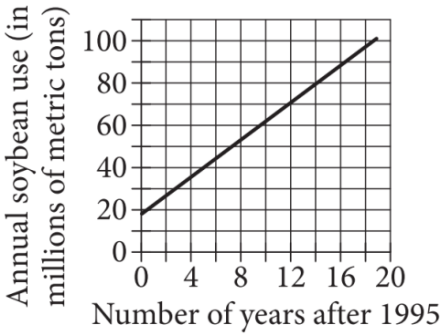
Questions 14 and 15 refer to the following information.

The given function C models the annual soybean use in China, in millions of metric tons, between 1995 and 2014, where x is the number of years after 1995.

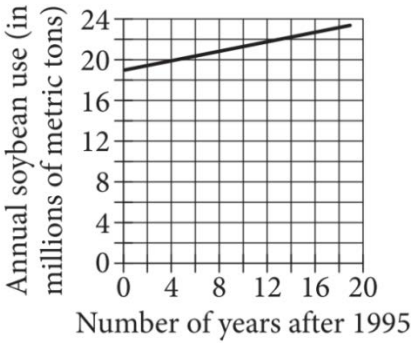
$$C(x) = 4.3x + 19$$

14 Which graph represents the model?

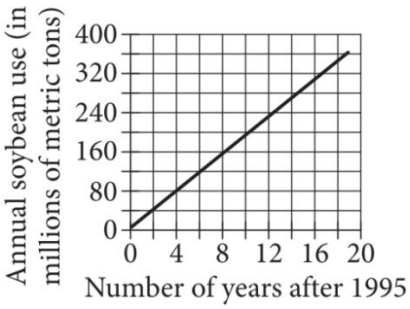
A.



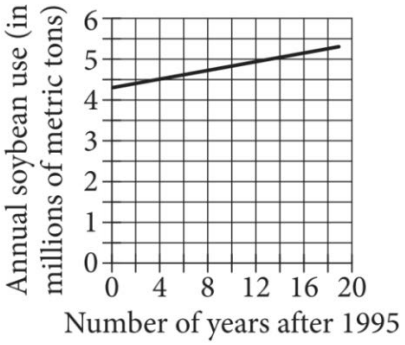
B.



C.



D.



15 According to the model, what is the best interpretation of 4.3 in this context?

A. Each year between 1995 and 2014, China used 4.3 million metric tons of soybeans.

B. Each year between 1995 and 2014, China's annual use of soybeans increased by 4.3 million metric tons.

C. China used 4.3 million metric tons of soybeans in 1995.

D. China used a total of 4.3 million metric tons of soybeans between 1995 and 2014.

Questions 16 and 17 refer to the following information.

$$C(x) = 50{,}000 + 0.75x$$
$$R(x) = 4.75x$$

The given function *C* models the total cost (sum of fixed cost and variable cost), in dollars, of growing and harvesting *x* bales of hay on a certain farm. The given function *R* models the revenue, in dollars, earned from selling *x* bales of hay.

16 According to the function *R*, how many bales of hay would have to be sold to earn a revenue of $1,425?

A. 100

B. 300

C. 500

D. 1,000

17 Which of the following inequalities models the number of bales of hay that must be sold to earn a profit of $10,000 or more? (profit = revenue − cost)

A. $10{,}000 \leq 4x - 50{,}000$

B. $10{,}000 \geq 4x - 50{,}000$

C. $10{,}000 \leq 4x + 50{,}000$

D. $10{,}000 \geq 4x + 50{,}000$

18

Which expression is equivalent to $(x^2+4)^2+(x-2)(x+2)$?

A. x^4+x^2+20

B. x^4+5x^2+16

C. x^4+9x^2

D. x^4+9x^2+12

19

$$y=4x+1$$
$$y=4x+3$$

How many solutions does the given system of equations have?

A. Zero

B. Exactly one

C. Exactly two

D. Infinitely many

20

$$h(x)=3x+3$$

Which inequality represents all values of x for which the graph of $y=h(x)$ in the xy-plane is above the x-axis?

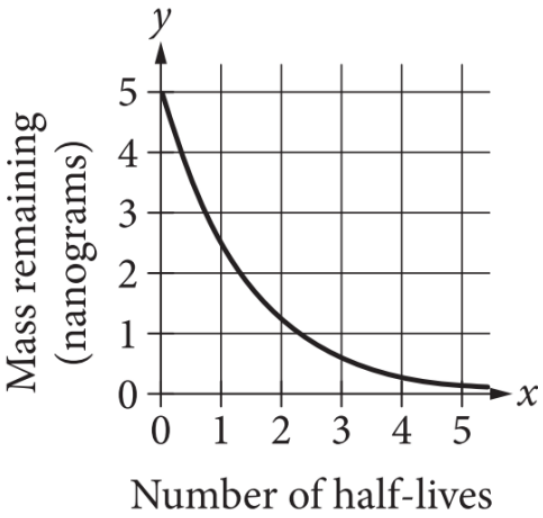
A. $x<3$

B. $x<-1$

C. $x>-1$

D. $x>3$

21



The graph models the mass y, in nanograms, of cobalt-60 (Co-60) remaining in a sample after x half-lives. The half-life of Co-60 is 5.27 years.

What is the mass, in nanograms, of Co-60 remaining in the sample after 10.54 years?

A. 0.47

B. 1.25

C. 2.00

D. 2.64

22

Which quadratic equation has no real solutions?

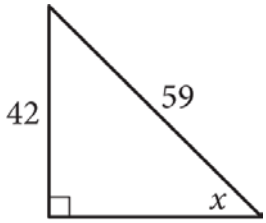
A. $3x^2-3=0$

B. $3x^2+3x=0$

C. $3x^2+3x+3=0$

D. $3x^2-6x+3=0$

23



For the triangle shown, which equation is NOT true?

A. $\sin x = \frac{42}{59}$

B. $\sin(90° - x) = \frac{42}{59}$

C. $\cos(90° - x) = \frac{42}{59}$

D. $\sin(90° - x) - \cos x = 0$

24 In 1976, there were approximately 1,000 gray wolves in northern Minnesota. The number of gray wolves in northern Minnesota in 2008 was 190% greater than in 1976. Approximately how many gray wolves were in northern Minnesota in 2008?

A. 1,190

B. 1,900

C. 2,900

D. 19,000

25 When the quadratic function *f* is graphed in the *xy*-plane, where $y = f(x)$, its vertex is $(-2,5)$. One of the *x*-intercepts of this graph is $\left(-\frac{7}{3},0\right)$. What is the other *x*-intercept of the graph?

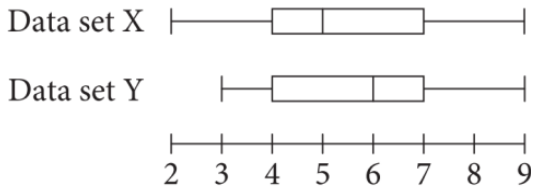
A. $\left(-\frac{13}{3},0\right)$

B. $\left(-\frac{5}{3},0\right)$

C. $\left(\frac{1}{3},0\right)$

D. $\left(\frac{7}{3},0\right)$

26



The box plots summarize data set X and data set Y. Each of the data sets consists of a total of 100 integers. Which of the following statements must be true?

1) The mean of data set X is less than the mean of data set Y.
2) The median of data set X is less than the median of data set Y.

A. I only

B. II only

C. I and II

D. Neither I nor II

27 For an exponential function *g*, the value of $g(x)$ decreases by 20% for each 1-unit increase in the value of *x*. If $g(2) = 16$, which equation could define *g* ?

A. $g(x) = 16(0.8)^{x-2}$

B. $g(x) = 16(0.8)^{x+2}$

C. $g(x) = 16(0.2)^{x-2}$

D. $g(x) = 16(0.2)^{x+2}$

28 Micha and Rana each selected a random sample of students at their school and asked how many soft drink servings each student had consumed the previous week. Micha estimated that the mean number of soft drink servings was 7.1, with an associated margin of error of 1.2. Rana estimated that the mean number of soft drink servings was 8.3, with an associated margin of error of 0.8. Assuming the margins of error were calculated in the same way, which of the following best explains why Rana obtained a smaller margin of error than Micha?

A. Rana's sample contained more students than Micha's sample contained.

B. Rana's sample contained more students who drink soft drinks than Micha's sample contained.

C. Rana's sample contained more students who drank exactly seven soft drink servings than Micha's sample contained.

D. Rana's sample contained more students who drank exactly eight soft drink servings than Micha's sample contained.

29 A circle in the *xy*-plane has its center at $(-3,4)$ and the point $(-2,1)$ lies on the circle. Which equation represents this circle?

A. $(x-3)^2+(y+4)^2=\sqrt{10}$

B. $(x+3)^2+(y-4)^2=\sqrt{10}$

C. $(x-3)^2+(y+4)^2=10$

D. $(x+3)^2+(y-4)^2=10$

30

x	*h(x)*
2	0
4	0
6	8

For the quadratic function *h*, the table gives three values of *x* and their corresponding values of $h(x)$. At what value of *x* does *h* reach its minimum?

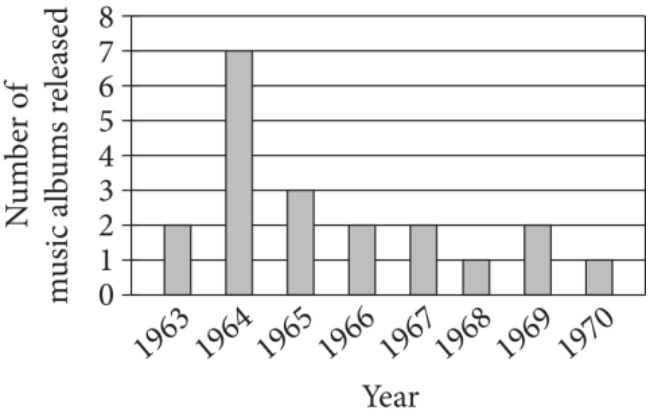
A. -1

B. 0

C. 3

D. 4

31



A certain rock band released 20 music albums from 1963 to 1970, as shown in the bar graph. If one of these albums is selected at random, what is the probability of selecting an album that was released in 1964? (Express your answer as a decimal or fraction, not as a percent.)

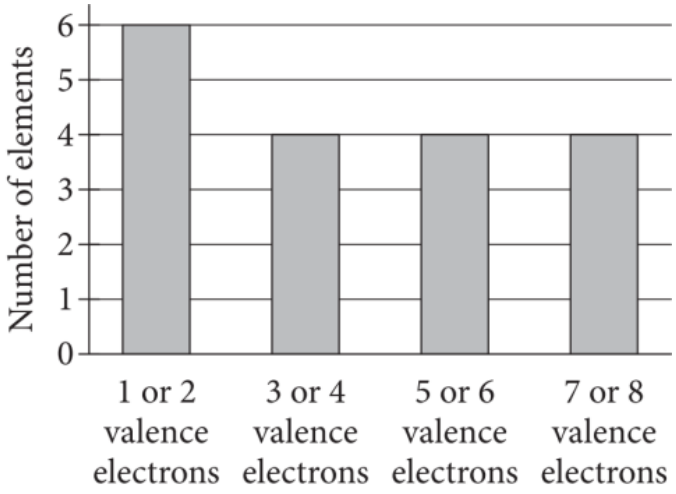
32 A company decides to sponsor an employee bowling team. The cost to form the team is $180 per team member plus a onetime $25 team-registration fee. What is the maximum number of team members who can join the team, if the company can spend $925 for the bowling team?

33

$$3x + 4y = 18$$
$$2x - 4y = 17$$

The solution to the given system of equations is (x, y). What is the value of x ?

34



For the elements in the periodic table having atomic numbers 1 though 18, the bar graph summarizes the number of elements by their number of valence electrons. How many of these elements have at most 4 valence electrons?

35 If $5\sqrt{3x} - 2 = 13$, what is the value of $3x$?

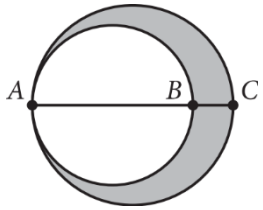
36 If $\frac{x}{y} = 8$ and $\frac{2x}{ty} = 160$, what is the value of t ?

37 The table summarizes the distribution of age and assigned group for participants in a study.

	0–9 years	10–19 years	20+ years	Total
Group A	20	18	22	60
Group B	14	14	32	60
Group C	26	28	6	60
Total	60	60	60	180

One of these participants will be selected at random. What is the probability of selecting a participant from group A, given that the participant is at least 10 years of age? (Express your answer as a decimal or fraction, not as a percent.)

38



In the figure shown, point B and the center of each circle lie on $\overline{AC}$. The ratio of AB to BC is 4 to 1. If the area of the small circle is 72, what is the area of the shaded region?

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

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

No Calculator	
Question	**Answer**
1	C
2	A
3	A
4	A
5	C
6	A
7	D
8	B
9	C
10	B
11	A
12	B
13	C
14	D
15	D
16	1/5, .2
17	11
18	14/3, 4.66, 4.67
19	6
20	5 or 9

Calculator			
Question	**Answer**	**Question**	**Answer**
1	B	21	B
2	B	22	C
3	C	23	B
4	D	24	C
5	D	25	B
6	C	26	B
7	B	27	A
8	A	28	A
9	C	29	D
10	A	30	C
11	A	31	7/20, .35
12	A	32	5
13	D	33	7
14	A	34	10
15	B	35	9
16	B	36	1/10, .1
17	A	37	1/3, .333
18	D	38	81/2, 40.5
19	A		
20	C		

Reading | Writing and Language | Math without Calculator | Math with Calculator

Questions Overview

52
Total Questions

[redacted]

Test Questions Key

Easy | Medium | Hard | Correct | Omitted | Unscorable | Multi-Gridded / Incorrect

Reading Test Questions

The questions in your score report may not be in the same order as you saw on test day.

Filters

Clear All Filters

Response: All Answers

Difficulty: All Difficulties

Subscores/Cross-Test Scores: All Scores

Question	Correct Answer	Your Answer	Difficulty	Subscores/Cross-Test Scores
1	B	[redacted]	■■□	N/A
2	A		■□□	Words in Context
3	A		■■□	N/A
4	D		■■□	Command of Evidence
5	B		■□□	Words in Context
6	C		■■□	N/A
7	B		■■□	N/A
8	C		■■□	N/A
9	A		■□□	N/A
10	D		■■□	Command of Evidence
11	C		■■□	Analysis in History/ Social Studies
12	B		■■□	Analysis in History/ Social Studies Command of Evidence
13	D		■■□	Analysis in History/ Social Studies Command of Evidence
14	C		■■■	Analysis in History/ Social Studies Command of Evidence
15	A		■■■	Analysis in History/ Social Studies
16	C		■□□	Analysis in History/ Social Studies
17	A		■■□	Analysis in History/ Social Studies
18	B		■□□	Analysis in History/ Social Studies Words in Context
19	C		■■□	Analysis in History/ Social Studies
20	D		■■□	Analysis in History/ Social Studies Command of Evidence
21	A		■■□	Analysis in History/ Social Studies
22	C		■□□	Analysis in Science
23	D		■□□	Analysis in Science
24	A		■□□	Analysis in Science
25	B		■□□	Analysis in Science Words in Context
26	A		■□□	Analysis in Science Words in Context
27	C		■■□	Analysis in Science
28	B		■■□	Analysis in Science Command of Evidence
29	D		■■□	Analysis in Science
30	A		■□□	Analysis in Science
31	B		■□□	Analysis in Science
32	D		■■□	Analysis in Science Command of Evidence
33	C		■■□	Analysis in History/ Social Studies
34	D		■■■	Analysis in History/ Social Studies Command of Evidence
35	C		■■□	Analysis in History/ Social Studies
36	D		■■□	Analysis in History/ Social Studies
37	C		■■□	Analysis in History/ Social Studies
38	A		■□□	Analysis in History/ Social Studies Words in Context
39	B		■■□	Analysis in History/ Social Studies
40	B		■■□	Analysis in History/ Social Studies
41	A		■□□	Analysis in History/ Social Studies Words in Context
42	D		■□□	Analysis in History/ Social Studies Words in Context
43	A		■□□	Analysis in Science
44	C		■□□	Analysis in Science
45	D		■■□	Analysis in Science
46	C		■■□	Analysis in Science
47	D		■□□	Analysis in Science Words in Context
48	A		■□□	Analysis in Science Words in Context
49	D		■■□	Analysis in Science
50	D		■■□	Analysis in Science
51	B		■■□	Analysis in Science Command of Evidence
52	A		■■□	Analysis in Science

Questions Overview

44
Total Questions

[redacted]

Test Questions Key

Easy | Medium | Hard | Correct | Omitted | Unscorable | Multi-Gridded / Incorrect

Writing and Language Test Questions

The questions in your score report may not be in the same order as you saw on test day.

Filters

Clear All Filters

Response: All Answers

Difficulty: All Difficulties

Subscores/Cross-Test Scores: All Scores

Question	Correct Answer	Your Answer	Difficulty	Subscores/Cross-Test Scores
1	C	[redacted]	■■□	Standard English Conventions
2	B		■■□	Standard English Conventions
3	D		■■■	Analysis in History/ Social Studies Words in Context Expression of Ideas
4	C		■■□	Analysis in History/ Social Studies Expression of Ideas
5	B		■■□	Analysis in History/ Social Studies Words in Context Expression of Ideas
6	A		■□□	Analysis in History/ Social Studies Expression of Ideas
7	A		■■□	Standard English Conventions
8	A		■□□	Analysis in History/ Social Studies Command of Evidence Expression of Ideas
9	B		■□□	Analysis in History/ Social Studies Command of Evidence Expression of Ideas
10	D		■□□	Standard English Conventions
11	D		■□□	Standard English Conventions
12	A		■■□	Command of Evidence Expression of Ideas
13	B		■□□	Standard English Conventions
14	D		■□□	Standard English Conventions
15	D		■■■	Standard English Conventions
16	C		■■□	Words in Context Expression of Ideas
17	D		■■□	Command of Evidence Expression of Ideas
18	B		■■□	Standard English Conventions
19	D		■□□	Standard English Conventions
20	C		■□□	Expression of Ideas
21	A		■■□	Words in Context Expression of Ideas
22	B		■■□	Expression of Ideas
23	C		■■□	Analysis in Science Words in Context Expression of Ideas
24	C		■□□	Standard English Conventions
25	A		■■□	Analysis in Science Words in Context Expression of Ideas
26	B		■■□	Standard English Conventions
27	A		■■□	Standard English Conventions
28	C		■■□	Analysis in Science Expression of Ideas
29	B		■■□	Analysis in Science Expression of Ideas
30	D		■□□	Standard English Conventions
31	A		■□□	Analysis in Science Command of Evidence Expression of Ideas
32	D		■■□	Analysis in Science Command of Evidence Expression of Ideas
33	C		■■■	Standard English Conventions
34	B		■■□	Expression of Ideas
35	A		■■□	Words in Context Expression of Ideas
36	C		■■□	Standard English Conventions
37	C		■■□	Standard English Conventions
38	D		■■□	Command of Evidence Expression of Ideas
39	B		■■□	Standard English Conventions
40	D		■□□	Standard English Conventions
41	A		■■□	Words in Context Expression of Ideas
42	D		■■□	Command of Evidence Expression of Ideas
43	D		■□□	Expression of Ideas
44	B		■■□	Standard English Conventions

Questions Overview

20
Total Questions

[redacted]

Test Questions Key

■□□ Easy ■■□ Medium ■■■ Hard | ✓ Correct | ⊘ Omitted | U Unscorable | × Multi-Gridded / Incorrect

Math without Calculator Test Questions

The questions in your score report may not be in the same order as you saw on test day.

Response: All Answers ⌄ | **Difficulty**: All Difficulties ⌄ | **Subscores/Cross-Test Scores**: All Scores ⌄

Question	Correct Answer	Your Answer	Difficulty	Subscores/Cross-Test Scores
1	C	[redacted]	■□□	Analysis in History/ Social Studies Heart of Algebra
2	A		■□□	Heart of Algebra
3	A		■■□	Passport to Advanced Math
4	A		■■□	Heart of Algebra
5	C		■■□	Passport to Advanced Math
6	A		■■□	Passport to Advanced Math
7	D		■■□	Heart of Algebra
8	B		■■□	Passport to Advanced Math
9	C		■■□	N/A
10	B		■■□	Heart of Algebra
11	A		■■□	N/A
12	B		■■□	Analysis in History/ Social Studies Passport to Advanced Math
13	C		■■■	Analysis in History/ Social Studies Passport to Advanced Math
14	D		■■■	Heart of Algebra
15	D		■■■	Passport to Advanced Math
16	1/5,.2		■□□	Heart of Algebra
17	11		■■□	Passport to Advanced Math
18	4.66,14/3,4.67		■■■	Heart of Algebra
19	6		■■■	N/A
20	5,9		■■■	Passport to Advanced Math

Questions Overview

38
Total Questions

[redacted]

Test Questions Key

■□□ Easy ■■□ Medium ■■■ Hard | ✓ Correct ⊘ Omitted ∪ Unscorable ✕ Multi-Gridded / Incorrect

Math with Calculator Test Questions

The questions in your score report may not be in the same order as you saw on test day.

Filters — Clear All Filters

Response: All Answers ⌄ | **Difficulty**: All Difficulties ⌄ | **Subscores/Cross-Test Scores**: All Scores ⌄

Question	Correct Answer	Your Answer	Difficulty	Subscores/Cross-Test Scores
1	B	[redacted]	■□□	Problem Solving and Data Analysis
2	B		■□□	Problem Solving and Data Analysis
3	C		■□□	Heart of Algebra
4	D		■□□	Analysis in Science Problem Solving and Data Analysis
5	D		■□□	Problem Solving and Data Analysis
6	C		■□□	Problem Solving and Data Analysis
7	B		■□□	Analysis in Science Problem Solving and Data Analysis
8	A		■□□	Analysis in Science Problem Solving and Data Analysis
9	C		■□□	Problem Solving and Data Analysis
10	A		■□□	Analysis in Science Heart of Algebra
11	A		■□□	Analysis in History/ Social Studies Problem Solving and Data Analysis
12	A		■□□	Heart of Algebra
13	D		■□□	Analysis in Science Problem Solving and Data Analysis
14	A		■□□	Analysis in History/ Social Studies Heart of Algebra
15	B		■■□	Analysis in History/ Social Studies Heart of Algebra
16	B		■□□	Analysis in History/ Social Studies Heart of Algebra
17	A		■■■	Analysis in History/ Social Studies Heart of Algebra
18	D		■■□	Passport to Advanced Math
19	A		■■□	Heart of Algebra
20	C		■■□	Heart of Algebra
21	B		■■□	Analysis in Science Passport to Advanced Math
22	C		■■□	Passport to Advanced Math
23	B		■■□	N/A
24	C		■■□	Analysis in Science Problem Solving and Data Analysis
25	B		■■■	Passport to Advanced Math
26	B		■■■	Problem Solving and Data Analysis
27	A		■■■	Passport to Advanced Math
28	A		■■■	Problem Solving and Data Analysis
29	D		■■■	N/A
30	C		■■■	Passport to Advanced Math
31	7/20,.35		■□□	Problem Solving and Data Analysis
32	5		■□□	Heart of Algebra
33	7		■■□	Heart of Algebra
34	10		■■□	Analysis in Science Problem Solving and Data Analysis
35	9		■■□	Passport to Advanced Math
36	.1,1/10		■■■	Problem Solving and Data Analysis
37	1/3,.333		■■■	Problem Solving and Data Analysis
38	40.5,81/2		■■■	N/A