

Reading and Writing Module 1

27 QUESTIONS

1

The National Heritage Fellowship was created to honor exceptional folk and traditional artists in the United States. One artist who received the fellowship is jazz violinist and guitarist Claude "Fiddler" Williams. Williams was chosen for his lifetime _____ the arts.

Which choice completes the text with the most logical and precise word or phrase?

- A) misunderstandings of
- B) imitations of
- C) doubts about
- D) contributions to

2

The following text is from Kenneth Grahame's 1908 novel The Wind in the Willows. The Mole is returning home after a visit to Mr. Badger's house.

As he hurried along, eagerly anticipating the moment when he would be at home again among the things he knew and liked, the Mole saw clearly that he was an animal of tilled field and hedge-row, linked to the ploughed furrow, the frequented pasture, the lane of evening lingerings, the cultivated garden-plot.

As used in the text, what does the word "anticipating" most nearly mean?

- A) Looking forward to
- B) Controlling
- C) Getting ahead of
- D) Demonstrating

3

The fossil remains of the individual known as Oase 1, discovered in Romania in 2002, can help paleoanthropologists not only _____ steps in the evolution of hominids but also illuminate the Pleistocene epoch generally, revealing important details about the time in which Oase 1 lived.

Which choice completes the text with the most logical and precise word or phrase?

- A) approve
- B) determine
- C) influence
- D) initiate

4

The Betsiboka River delta is a remarkably _____ landscape: it is a constantly evolving network of channels and strips of land that change in size and shape as the river deposits new sedimentary particles where the river meets the waters of the Indian Ocean.

Which choice completes the text with the most logical and precise word or phrase?

- A) habitable
- B) homogeneous
- C) mutable
- D) secluded

5

A microgenre is a specialized genre consisting of a comparatively small number of stylistically similar artists. The microgenre of electronic music known as hyperpop emerged in the 2010s, with American musician Laura Les as an early exponent. Her combination of dense synthesizer arrangements and metallic percussion with vocals electronically shifted in pitch above her natural range exemplifies the hyperpop sound. More recently, Japanese-British recording artist Rina Sawayama has contributed to the microgenre by incorporating pop melodies into hyperpop songs.

Which choice best describes the function of the underlined sentence in the text as a whole?

- A) It anticipates an objection to the text's endorsement of hyperpop
- B) It states that the text's intended audience mainly consists of hyperpop fans.
- C) It notes an exception to the text's description of hyperpop.
- D) It defines a term used in the text's discussion of hyperpop.

6

Cuttlefish and barn owls see in three dimensions (3D) by combining two images in their brains, one from each eye. This produces a sense of depth, helping the animals judge how close or far away an object is. Researchers have investigated 3D vision in praying mantises as well. In one study, Vivek Nityananda and his team fitted mantises' faces with two different color filters, one covering each eye, much like the filters in 3D glasses once worn at movies. By observing the mantises' reaction to projected images, the team confirmed that mantises do indeed have 3D vision, but it's unlike that of other animals.

Which choice best states the function of the underlined portion in the text as a whole?

- A) It offers a comparison meant to aid understanding of the praying mantis study.
- B) It emphasizes a difference between the research on praying mantis vision and research on other animals' vision.
- C) It describes an earlier use of a tool the researchers used in the praying mantis study.
- D) It identifies a potential problem that the researchers faced while studying the praying mantises.

7

Text 1 is adapted from George Eliot's 1871 novel Middlemarch. Text 2 is a work of literary criticism about Middlemarch.

Text 1

[Caleb Garth] took the paper and lowered his spectacles, measured the space at his command, reached his pen and examined it, dipped it in the ink and examined it again, then pushed the paper a little way from him, lifted up his spectacles again, showed a deepened depression in the outer angle of his bushy eyebrows, which gave his face a peculiar mildness. (pardon these details for once --- you would have learned to love them if you had known Caleb Garth.)

Text 2

In addition to providing detailed accounts of characters' mannerisms, Middlemarch's narrator reveals characters' innermost thoughts with great specificity. As a result, the omniscient narrator is frequently conflated with the author herself (George Eliot). Occasionally, though, in direct addresses to the reader, the narrator is represented as reminiscing about characters as if they were personal acquaintances. Foregrounding the narrator's own fictionality, such gestures counteract the tendency to identify the narrator with the author, a tendency of which Eliot was wary.

Based on the texts, how would the author of Text 2 most likely characterize the underlined portion in Text 1?

- A) As evidence of Eliot's talent for describing characters' mannerisms in great detail, enabling readers to feel as if they know the character personally
- B) As an example of how Eliot's omniscient narrator seamlessly enters into a particular character's consciousness, revealing that character's thoughts
- C) As a strategy that emphasizes the narrator's distinct fictional persona, thus helping to discourage the reader's direct association of the narrator with Eliot herself
- D) As an indication of Eliot's affection for the character of Caleb Garth, whose mannerisms she predicts will be universally endearing

8

Text 1

According to a study by a conservation group representing 11 tribal nations in the Great Lakes region, the firefly (waawaatesi in the Ojibwe language) will have significantly worse outcomes over the next 50 years if temperatures increase as much as some models suggest. By contrast, the American crow (aandeg in Ojibwe) should be able to withstand the highest predicted warming without much harm and so likely won't require the conservation efforts that the firefly will.

Text 2

US government agencies involved in conservation are unfortunately notable to address every possible threat to natural resources. They must use the best information available to decide which species are most threatened and therefore most in need of conservation efforts.

Based on the texts, both authors would most likely agree with which statement?

- A) A collaborative approach is necessary to keep temperatures in the Great Lakes region from increasing to the highest predicted levels.
- B) Agencies involved in natural-resource management in the Great Lakes region should focus their conservation efforts more on the firefly than on the American crow.
- C) Conservation efforts focused on the firefly are more likely to be successful if they incorporate state and federal agency resources with the knowledge of tribal groups in those efforts.
- D) State, federal, and tribal groups involved in natural-resource management in the Great Lakes region should immediately begin conservation programs for both the firefly and the American crow

9

The following text is from Julia Alvarez's 2000 novel *In the Name of Salomé*. Salomé, a poet, is hosting guests in the front parlor of her family home, and Ramona is her sister. A salon is a social gathering for the exploration of intellectual ideas.

It was evening when the two men got up to leave. Tia Ana had already come into the room several times to see if these guests had departed yet. The front parlor had always been her special province, as she used it for her little school. Now, every evening, it turned into Salomé's salon, as Ramona called it, and it was never in order for its transformation back to a classroom the following morning.

Based on the text, what most likely motivates Tia Ana's behavior during Salomé's salon?

- A) She is frustrated because she needs assistance elsewhere in the house, but Salomé is unavailable while entertaining the guests.
- B) She is impatient to share her plans to start a new school with the guests and hopes they will support her.
- C) She is anxious for the gathering to disperse so that she can ready the space for her own needs.
- D) She considers the guests to be uninteresting and is trying to convince them to leave.

10

Plant-based artifacts, such as wooden tools, are not frequently studied because their perishable nature makes them likely to break down overtime. However, Miriam Cubas and team were able to study plant-based artifacts believed to stem from the Neolithic period that had been well preserved by favorable conditions of a cave in Spain: low overall humidity and a dry wind current facilitated preservation by suppressing bacterial growth. Surprisingly, the research revealed that some of the artifacts dated even further back than previously thought, to the Mesolithic period.

According to the text, what is one likely factor that caused the artifacts Miriam Cubas and team studied to be well preserved?

- A) Climate variations during the Mesolithic period
- B) Limited bacterial growth on the artifacts
- C) The presence of multiple types of plants around the artifacts
- D) A very humid cave environment

11

Effect of Neighboring Species on Pollinator Visits to Target Species

Neighboring species	Target species	Effect value
viper's-bugloss	butterfly flower	-0.3312
Canadian wood betony	mayapple	0.4729
Virginia spring beauty	star chickweed	0.8674
common dandelion	cat's ear	-1.0576

Researchers Carolina Laura Morales and Anna Traveset gathered data about flowering plants growing alongside each other in various locations. In each case, the researchers identified one plant as a "target species" and a nearby plant as a "neighboring species." The researchers then calculated a value to show how the neighboring species affected pollinator visits to the target species. A negative effect value indicates that the neighboring species had a harmful effect on the target species. Based on the table, two neighboring species that had a harmful effect on target species are the _____

Which choice most effectively uses data from the table to complete the statement?

- A) Canadian wood betony and the Virginia spring beauty
- B) viper's-bugloss and the Canadian wood betony.
- C) common dandelion and the Virginia spring beauty.
- D) common dandelion and the viper's-bugloss.

12

"A Pair of Silk Stockings" is an 1897 short story written by Kate Chopin. In the story, Mrs. Sommers attends a play, which she experiences as a temporary escape from the circumstances of her daily life:

Which quotation from "A Pair of Silk Stockings" most effectively illustrates the claim?

- A) *But there were vacant seats here and there, and into one of them she was ushered, between brilliantly dressed women who had gone there to kill time and eat candy and display their gaudy attire."
- B) "She did not wish to act hastily, to do anything she might afterward regret."
- C) "There were many others who were there solely for the play and acting."
- D) *The play was over, the music ceased, the crowd filed out. It was like a dream ended."

13

Hypothesizing that lullabies, characterized by their less steady beat, are universally calming to infants. Constance M. Bainbridge and colleagues played a lullaby sung in the Western Nahuatl language and a non-lullaby sung in the Serbian language to a group of infants. The team found that the infants' heart rates and pupil size both decreased more during the lullaby than during the non-lullaby. Since a decrease in heart rate is associated with relaxation, the team concluded that the lullaby relaxed the infants. However, noting that reduced heart rate can also be associated with increased attention, one critic argues that instead, the lullaby simply attracted the infants' attention.

Which finding, if true, would most directly weaken the critic's claim?

- A) Infants in the study had never heard the Western Nahuatl lullaby before.
- B) Pupil size typically increases when a stimulus captures a person's attention.
- C) More frequent blinking has also been found to be a reliable indication of attention.
- D) Parents of infants in the study preferred the Western Nahuatl lullaby over the Serbian non-lullaby.

14

HEA identification number	Composition (%)	(megapascals times the square root of crack length)
15	chromium (33.33), cobalt(33.33), nickel (33.33)	265.20
98	aluminum (20), chromium(20), cobalt (20), iron (20), nickel (20)	186.47
1	aluminum (10.53), boron(5.26), chromium (10.53), cobalt (10.53), copper (10.53), iron (10.53), molybdenum(10.53), nickel (10.53), silicon(10.53), titanium (10.53)	50.90
53	molybdenum (25), niobium(25), tantalum (25), tungsten(25)	2.90
104	cobalt (20), chromium (20), iron (20), manganese (20), titanium (20)	2.44

Composition values may not add up to 100 due to rounding.

High-entropy alloys (HEAs) have been observed to have greater fracture toughness --- greater resistance to crack propagation --- than conventional alloys. It has been proposed that fracture toughness increases with the proportion of an HEA consisting of cobalt, but data on HEAs compiled by engineer Xuesong Fan show that this is not the case; for example, _____

Which choice most effectively uses data from the table to complete the text?

- A) cobalt constitutes the same proportion of HEA 98 as it does of HEA 104.
- B) cobalt constitutes a substantial proportion of HEA 15 but does not constitute any of HEA S3.
- C) cobalt constitutes a different proportion of HEA 1 than it does of HEA 98.
- D) cobalt constitutes a higher proportion of HEA 15 than it does of HEA 98.

15

The alahee tree is one of many forest plant species native to Oahu (a Hawaiian island) that are at risk of extinction. The survival of most of these species in the wild largely depends on birds eating their fruits and then dropping the seeds in different locations. Although Oahu's native fruit-eating birds have all gone extinct, the red-vented bulbul and other fruit-eating bird species have been brought to the island and are now common there. Studies confirm that these non-native birds are spreading plant seeds on Oahu, suggesting that the birds _____

Which choice most logically completes the text?

- A) show significantly more interest in eating the fruits of native forest plants than in eating the fruits of non-native ones.
- B) are dropping higher numbers of native forest plant seeds around the island than native bird species did in the past.
- C) may also engage in other activities that affect the ability of alahee trees and other vulnerable forest plants to continue to spread to new areas

D) may be necessary for the continued survival of vulnerable forest plant species, such as the alahee tree.

16

"Quirky," a term often employed by those analyzing independent cinema from the 1990s and 2000s, has proved remarkably malleable as a formal concept. In the work of film scholar James MacDowell, quirkiness is a comedic sensibility --- on full display in films like *The Fantastic Mr. Fox* and *Napoleon Dynamite* --- characterized by _____ "tonal combination of 'irony and 'sincerity.'"

Which choice completes the text so that it conforms to the conventions of Standard English?

- A) it's
- B) its
- C) their
- D) they're

17

The human body has three types of muscle _____ cardiac, and skeletal. The extensor indicis is a skeletal muscle --- of which the body contains more than six hundred --- and it helps with extending the index finger.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A) tissue: smooth.
- B) tissue. Smooth
- C) tissue and smooth,
- D) tissue smooth.

18

Mississippi resident Hiram Rhodes Revels, sworn in as a member of the US Senate in 1870, was one of the nearly two thousand African _____ during the decade following the Civil War.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A) American's who won elections
- B) Americans' who won elections'
- C) Americans who won election's
- D) Americans who won elections

19

Greece's constitution, enacted in 1975, contains three of the six constitutional features that enhance judicial independence, as identified by legal scholars James Melton and Tom Ginsburg,. Explicit provisions for judicial independence, their research explains, _____ more likely to be found in constitutions enacted after 1985.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A) is
- B) was
- C) has been

D) are

20

The programming languages COBOL, developed by Grace Hopper in _____ developed by Chris Lattner in 2014, are all routinely translated into executable code by tools known as compilers.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A) 1959; Clojure, developed by Rich Hickey in 2007; and Swift,
- B) 1959, Clojure; developed by Rich Hickey in 2007: and Swift
- C) 1959, Clojure developed by Rich Hickey in 2007; and Swift
- D) 1959; Clojure, developed by Rich Hickey in 2007, and Swift,

21

Proto-Uto-Aztecan is a protolanguage, or a hypothesized ancestral language, of all the Uto-Aztecan languages (fifty-eight languages that, because _____ descendants of Proto-Uto-Aztecan, can provide information about the protolanguage's structure).

Which choice completes the text so that it conforms to the conventions of Standard English?

- A) their
- B) it's
- C) they're
- D) its

22

Though Middle English was widely spoken in fourteenth-century England, the English language was rarely employed in literature until poet Geoffrey Chaucer pioneered its literary use. _____ his manuscripts contain the first documented uses of over 2,000 English words --- like the word "annoyance" in his 1386 poem "The Parson's Tale" --- which led a contemporary to dub him "the first finder of our fair language."

Which choice completes the text with the most logical transition?

- A) However,
- B) Besides,
- C) In fact,
- D) On the contrary,

23

In skateboarding, the 900 --- a trick in which the skateboarder spins two and a half times in midair --- is so rare that every successful execution of it is a historic occasion. _____ ever since Jonathan Schwan and Tas Pappas performed their 900s (in 2013 and 2014, respectively), fans have revered them as titans of the sport.

Which choice completes the text with the most logical transition?

- A) Regardless,
- B) For this reason,
- C) By comparison,

D) In conclusion,

24

While researching a topic, a student has taken the following notes:

- Elizabeth Catlett (1915-2012) was a celebrated African American artist.
- She is best known for creating sculptures and prints that explore the Black experience.
- Black Unity is a 1968 sculpture by Catlett.
- Links Together is a 1996 print by Catlett.

The student wants to provide an example of one of Catlett's sculptures. Which choice most effectively uses relevant information from the notes to accomplish this goal?

- A) Artist Elizabeth Catlett is best known for creating sculptures and prints that explore the Black experience.
- B) Elizabeth Catlett, a celebrated artist, was born in 1915.
- C) The print Links Together was created by celebrated artist Elizabeth Catlett in 1996.
- D) The sculpture Black Unity was created by celebrated artist Elizabeth Catlett in 1968.

25

While researching a topic, a student has taken the following notes:

- Lighthouses send out crucial light signals to help ships and other watercraft navigate at night.
- Before automation, lighthouses were run by lighthouse keepers.
- Catherine A. Murdock was the lighthouse keeper at Rondout Creek Light in New York.
- She held this position from 1857 to 1907.
- Mary J. Succow was the lighthouse keeper at Pass Manchac Light in Louisiana.
- She held this position from 1873 to 1909.

The student wants to emphasize a similarity between Catherine A. Murdock and Mary J. Succow. Which choice most effectively uses relevant information from the notes to accomplish this goal?

- A) Catherine A. Murdock and Mary J. Succow were both lighthouse keepers during the late nineteenth and early twentieth centuries
- B) Catherine A. Murdock and Mary J. Succow spent their careers as lighthouse keepers in different lighthouses.
- C) From 1857 to 1907, the nighttime waters of New York were more navigable thanks to Catherine A. Murdock
- D) Lighthouse keepers during the late nineteenth and early twentieth centuries were crucial to ensuring safe navigation for watercraft.

26

- The Museu de les Ciències Príncep Felip in Valencia, Spain, is home to a Foucault pendulum.
- The pendulum consists of a weighted ball that swings at the end of a roughly 34-meter-long cable.
- Like all Foucault pendulums, it hangs from a fixed point that ensures the swing path of the pendulum doesn't change.

- To an observer, the swing path of a Foucault pendulum appears to change over time because Earth rotates beneath it.
- Foucault pendulums are used as a simple way to provide evidence of Earth's rotation.

Which choice most effectively uses information from the given sentences to specify the length of the Foucault pendulum's cable?

- A) The Foucault pendulum at the Museu de les Ciències Príncep Felip in Valencia, Spain, includes a cable that is roughly 34 meters long.
- B) Although the swing path of a Foucault pendulum doesn't actually change, it appears to change due to Earth rotating beneath the pendulum.
- C) With a swing path that appears to change over time, a Foucault pendulum provides evidence of Earth's rotation.
- D) The Foucault pendulum at the Museu de les Ciències Príncep Felip consists of a weighted ball and a cable.

27

While researching a topic, a student has taken the following notes:

- Mali is a country in West Africa.
- A high percentage of Mali's population (47.3 percent) is under fifteen years old.
- It has the second-largest under-fifteen population in the world.
- Roughly 40 percent of Africa's population is under fifteen years old --- the highest of any continent.
- According to the United Nations (UN), Africa's "high number of young people is an opportunity for the continent's growth --- but only if these new generations are fully empowered to realize their best potential."

The student wants to emphasize the global rank of Mali's youth population. Which choice most effectively uses relevant information from the notes to accomplish this goal?

- A) Making up roughly 40 percent of the continent's total population, Africa's under-fifteen population offers "an opportunity for the continent's growth," according to the UN.
- B) "Only if these new generations are fully empowered to realize their best potential," says the UN, will Africa's high percentage of young people lead to the continent's growth.
- C) With 47.3 percent of its population under fifteen years of age, Mali has the second-largest population for that age range in the world.
- D) Africa's high population of young people is due in part to the high percentage of young people in Mali.

Reading and Writing Module 2

27 QUESTIONS

1

Béjné Mocsáry, who traveled solo to four continents in the early 1900s, undoubtedly accomplished much, but to gain a lasting place in our historical memory, there is little that can _____ being the first to do something. For example, people will always remember that Adeline and Augusta Van Buren were the first women to ride solo motorcycles across the continental United States.

Which choice completes the text with the most logical and precise word or phrase?

- A) constrain within
- B) fluctuate with
- C) overreach by
- D) prevail over

2

Despite stated claims of global relevance, much major research on income inequality performed in the 2010s suffered from a myopic focus on a few countries in North America and Western Europe, partly due to limited data availability. Researchers would later _____ this shortcoming after gaining new access to administrative records located in nations in Asia, such as India, and Eastern Europe, such as Poland.

Which choice completes the text with the most logical and precise word or phrase?

- A) sanction
- B) postulate
- C) ameliorate
- D) rationalize

3

In the early 2010s, the price of abstract paintings by so-called Zombie Formalist artists rose dramatically, which had the counterintuitive effect of _____ demand: buyers who hadn't previously wanted to purchase Zombie Formalist paintings thronged the market, believing prices would continue to rise and the paintings could be resold later at a profit.

Which choice completes the text with the most logical and precise word or phrase?

- A) exploiting
- B) eliciting
- C) capitalizing
- D) satisfying

4

The fact that publications by Federal Reserve Bank of Cleveland economist Loretta J. Mester, who studies central banking, are so frequently cited in other scholars' work _____ the usefulness of her research for her peers --- other economists clearly find her studies valuable for their own scholarship.

Which choice completes the text with the most logical and precise word or phrase?

- A) underscores
- B) overshadows
- C) belies
- D) forestalls

5

Shedding light on the thermal biology of fungi, research by Radamés Cordero et al. indicates that certain mushrooms (including *Amanita brunnescens* and species from the genus *Hortiboletus*) can achieve a hypothermic state through evaporative cooling. Effects of this thermoregulation were not limited to the fungi's fruiting bodies and root-like hyphae: temperature reductions were observed in the air immediately surrounding the mushrooms. Though slight, the reductions inspired an air-cooling device; using approximately 400 grams of mushrooms, the team's prototype lowered the air temperature in a controlled environment by 10°C in forty minutes.

Which choice best describes the function of the underlined portion in the text as a whole?

- A) It provides empirical evidence to bolster the claim made earlier in the text that certain fungal species maintain a hypothermic state.
- B) It identifies an unexpected observation that motivated the study of evaporative cooling in fungi that is discussed earlier in the text.
- C) It presents a tangential finding about thermoregulation in certain fungal species that the experiment described later in the text was designed to explain.
- D) It establishes a finding central to the text's discussion of a practical application resulting from the team's study of fungal thermal biology.

6

In Thailand, use of solid fuel (e.g., coal, wood) as a share of total household fuel use fell by approximately 40 percent between 2000 and 2019; such shifts are often explained by appeal to the energy ladder, a model holding that fuel choice is mediated mainly by household income (specifically, high-technology fuels displace solid fuels as incomes rise). Moses Pundo and Gavin Fraser's study of fuel use in Kenya shows this model to be reductive, however: household fuel use was heterogeneous, flexible, and influenced by several factors, including the type of dwelling a household occupies.

Which choice best describes the function of the information about Thailand in the text as a whole?

- A) It illustrates the kind of phenomenon that the text goes on to suggest is frequently but inadequately accounted for by the energy ladder
- B) It describes a trend that the text goes on to suggest has a similar cause as a seemingly unrelated trend observed in Kenya.
- C) It provides an example of a type of change that the text goes onto suggest is poorly suited for evaluating whether the energy ladder is a viable model
- D) It introduces a finding that the text goes on to suggest can be explained in two different ways that are equally compelling.

7

In a study by Mika R. Moran, Daniel A. Rodriguez, and colleagues, residents of Lima, Peru, and Buenos Aires, Argentina, were surveyed about parks in their cities. Of the 663 respondents from Lima, 72.796 indicated that they use the city's parks, and of the 683 respondents from Buenos Aires, 69.9% indicated using city parks. Given that the percentage of Lima respondents who reported living within a 10-minute walk of a park was much lower than that reported by Buenos Aires respondents, greater proximity alone can't explain the difference in park use.

The text makes which point about the difference between the proportions of Lima residents and Buenos Aires residents using parks?

- A) It could be due to inaccuracies in the survey results.

- B) It is caused by something other than the parks' proximity to city residents.
- C) It was calculated using sources that predate the survey
- D) It was much larger than the researchers conducting the study expected.

8

The bird species Philydor erythrocerum (the rufous-rumped foliage-gleaner) shares some territory in French Guiana with Thamnomanes caesius (the cinereous antshrike), which emits a loud alarm call when it detects predators. Biologist Ari Martinez and colleagues recorded T. caesius alarm calls and played them in the vicinity of wild P erythrocerum. Finding that the birds often froze in place or scattered into vegetation upon hearing the calls, they concluded that P erythrocerum associates T caesius alarm calls with danger.

Which finding, if true, would most directly support Martinez and colleagues' conclusion?

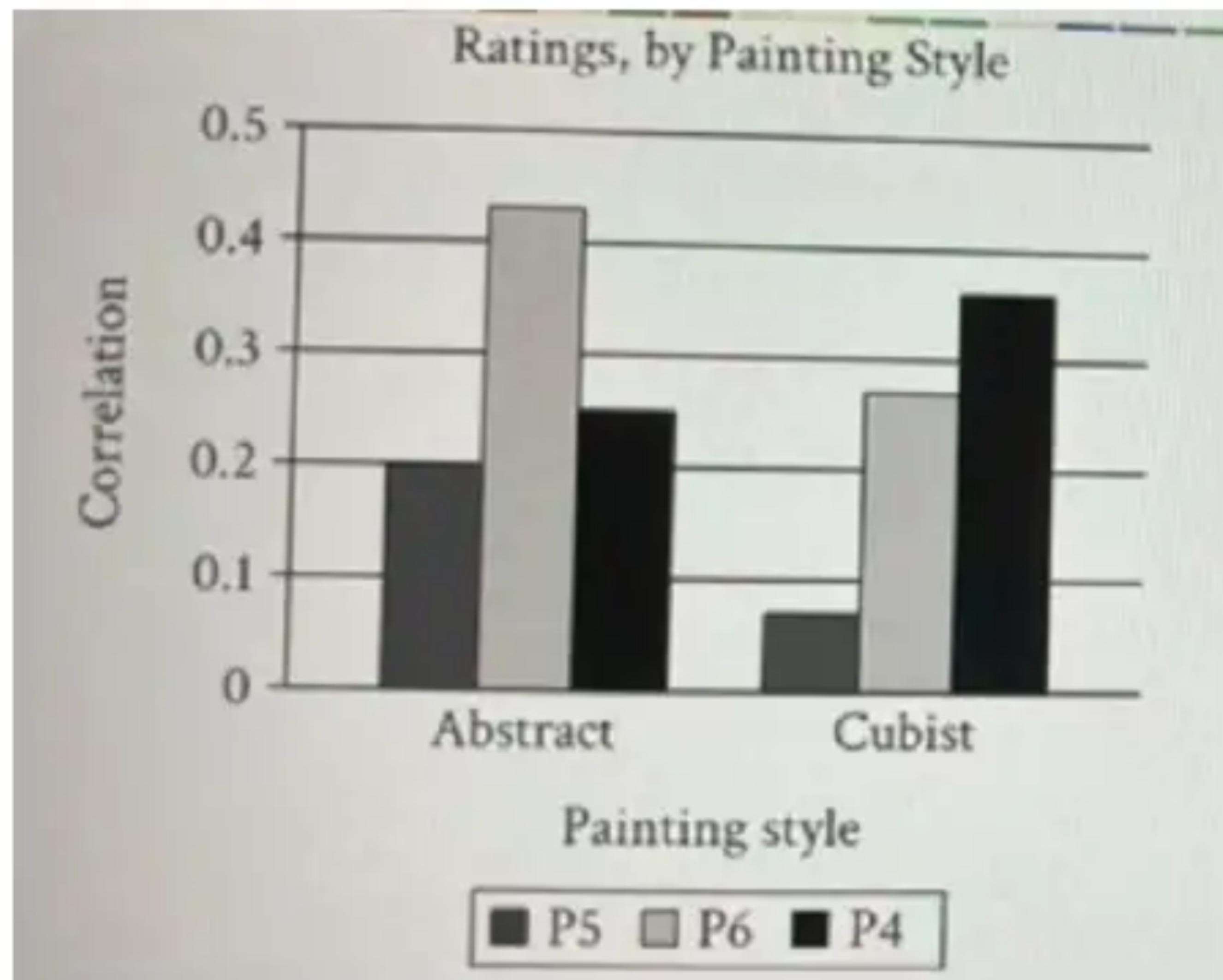
- A) In some instances, P erythrocerum froze in place or scattered into vegetation when Martinez and colleagues approached but before they began playing sounds.
- B) When Martinez and colleagues played control sounds of random noise in the vicinity of P erythrocerum, the birds displayed no reaction.
- C) Martinez and colleagues played alarm calls from different T.caesius individuals and observed no significant variation in the responses of P erythrocerum.
- D) Other bird species than P erythrocerum also showed a tendency to freeze in place or scatter into vegetation when Martinez and colleagues played T caesius alarm calls

9

Apple's introduction of the iPhone in 2007 is a quintessential instance of brand extension --- the company leveraged its brand recognition as a computer manufacturer to enter a product category where it had not previously competed. An outstanding question is whether perceived category similarity predicts consumers' likelihood of purchasing brand extensions. To answer this question, Alicia Grasby et al. identified 30 extended-brand pairs (e.g, the same brand of laundry detergent and air freshener) in 52 weeks of purchases by approximately 60,000 households and, for each pair, calculated the change in probability of a brand in one category being purchased if the same brand was purchased in the other category.

Based on the text, which potential study design would be most likely to produce evidence that would enable Grasby et al. to answer their research question?

- A) Have a representative sample of the households rate the similarity of one product in each extended-brand pair to other products in the same category, then determine how, if at all, those ratings correlate with the change in probability that the team calculated for each pair
- B) Poll a representative sample of the households to determine the degree of brand recognition of each brand in the extended-brand pairs, then determine how, if at all, the degree of brand recognition correlates with the average cost of each product in the pairs.
- C) Poll a representative sample of the households to determine the degree of brand recognition for each brand in the extended-brand pairs, then determine how, if at all, the degree of brand recognition correlates with the frequency with which a different group of households purchased at least one product of that brand.
- D) Have a representative sample of the households rate the similarity of the product categories in each extended-brand pair, then determine how, if at all, those ratings correlate with the change in probability that the team calculated for each pair



Neuroscientist Kiyohito Igaya and colleagues developed a computational model to predict how much a person will enjoy a particular work of art on a scale from 1 (not at all) to 4 (very much). They then recruited participants to use the same scale to rate several sets of paintings in various styles and calculated the correlation between the ratings predicted by the model and those reported by the participants. Assuming participant P6 gave equal ratings to the abstract and cubist paintings, the data in the graph indicate the model predicted that _____.

Which choice most effectively uses data from the graph to complete the example?

- A) P6's rating for abstract and cubist paintings would equal one another
- B) P6 would derive less aesthetic pleasure from abstract paintings than from cubist paintings
- C) P6 would derive more aesthetic pleasure from abstract paintings than from cubist paintings.
- D) P6's ratings for abstract and cubist paintings would differ from one another

Many studies have found a positive association between levels of dissolved organic carbon and mercury in bodies of fresh water in North America. But Enelton Fagnani, José Roberto Guimarã, and Pedro Sérgio Fadini did not find this correlation in a study conducted in Brazil, leading some scientists to hypothesize that the association is particular to North America. However, several other studies conducted outside North America, such as one by Sara M. Ekström and colleagues in Sweden, showed similar results to the North American studies, while few have produced results similar to those of Fagnani, Guimarã, and Fadini's study, suggesting that _____.

Which choice most logically completes the text?

- A) dissolved organic carbon and mercury levels do typically rise and fall together in fresh water
- B) there were circumstances unique to Ekström and colleagues' study that impeded accurate measurements of mercury levels.
- C) the hypothesis that the positive association is particular to North America is correct.
- D) levels of dissolved organic carbon and mercury in bodies of fresh water are both much higher in Brazil than elsewhere.

Chelsea Wood et al. tracked temperature-driven changes in the abundance of *Opechona* sp. (a complex life cycle parasite, or CLP, that requires three host species throughout its life cycle), *Bomolochus cuneatus* (a directly transmitted parasite, which requires only one host species), and 83 other parasite taxa found on eight fish species. CLPs are transmitted when an infected host is ingested by an individual of another species, typically shielding CLPs from the external environment, whereas directly transmitted parasites are exposed to external conditions during transmission. However, Wood et al. found that three-host CLP abundance decreased as sea temperatures rose, whereas directly transmitted parasite abundance was largely stable, suggesting that _____.

Which choice most logically completes the text?

- A) as the number of host species involved in a parasite's transmission increases, the parasite is better protected against rising temperatures.
- B) CLPs primarily transmitted by ingestion were less dependent on host species adversely affected by warming temperatures than were CLPs that use other transmission strategies.
- C) directly transmitted parasites identified in the study were more likely to use transmission strategies that shield them from warming temperatures than were three-host CLPs.
- D) any advantages that the transmission strategy used by three-host CLPs may have conferred did not completely offset the negative effects of other temperature-driven factors on CLP abundance.

13

Prolonged exposure to anthropogenic noise (sounds from human sources like traffic or mining) can affect animals, as Kirsty Elizabeth McLaughlin and Hansjoerg P Kunc found in a 2015 study of zebra cichlids. Researchers conducted a meta-analysis of studies of how such noise affects animals and found that, for every study, relevant traits or behaviors of the animals were observably different between the exposed group and the otherwise similar but unexposed group. Although, on average, studies of fish showed larger differences than studies of birds did, for every class of animals examined, there were individual studies showing differences well above the average for fish.

Therefore, the results of the meta-analysis suggest that _____.

Which choice most logically completes the text?

- A) the differences that studies attribute to exposure to anthropogenic noise are likely to be more pronounced for birds than they are for fish.
- B) the difference found in the study conducted by Kirsty Elizabeth McLaughlin and Hansjoerg P. Kunc was likely larger than the average difference for studies of zebra cichlids included in the meta-analysis.
- C) the studies in the meta-analysis that examined fish were more likely than those that examined birds to specify whether the observed effects were detrimental.
- D) some studies of birds found larger effects of exposure to anthropogenic noise than some studies of fish did.

14

Although the epic poem *Parzival* dates back to the 13th century, _____ compelling narrative still captivates readers today.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A) their
- B) its

- C) it's
- D) they're

15

Most sand is beige because of deposits of gray- and tan-hued minerals, such as quartz and feldspar. The sand at Les Sables Roses Beach in French Polynesia is a more unusual ____ deposits of crushed coral and other organic matter lend the sand a unique pink hue.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A) shade, though;
- B) shade; though
- C) shade, though,
- D) shade, though

16

The poem "The Egg Boiler," which was published in 1960, contains three signature elements of Gwendolyn Brooks's poetic ____ compressed lines infused with bursts of vivid imagery; syncopated rhythms, largely inspired by the blues tradition; and a keen attention to everyday life in Brooks's South Side Chicago neighborhood.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A) style: terse,
- B) style; terse,
- C) style. Terse,
- D) style, terse,

17

Neoclassical economic models assume that people consistently make rational economic decisions, but Francesca Gino of Harvard Business School makes no such assumption; behavioral economists such as Gino, whose research focuses on worker productivity, ____ that economic decision-making can in fact be highly irrational.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A) has contended
- B) is contending
- C) contends
- D) contend

18

While the greater adjutant (*Leptoptilos dubius*) can be found in places like Chhnuk Tru in Cambodia and Dong Khanthung in Laos, more than 80 percent of this endangered stork species is found in Assam, India. There, wildlife ____ is on the front lines of conservation efforts to bring adjutants back from near extinction.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A) biologist, Dr. Purnima Devi Barman
- B) biologist Dr. Purnima Devi Barman

- C) biologist: Dr, Purnima Devi Barman
- D) biologist, Dr Purnima Devi Barman,

19

The Roman dramatist Quintus Cicero's *De petitione consulatus*, a political handbook, is an extant work: it can still be read. By contrast, lost works like Quintus Cicero's tragedy in the Greek style, *Erigones* --- no copy of which exists --- _____ known to antiquarians only through references in extant works.

Which choice completes the text so that it conforms to the conventions of Standard English?

- A) becomes
- B) have become
- C) has become
- D) is becoming

20

Begona Vila is a space scientist who works on the James Webb Space Telescope, or JWST. Thanks in part to Vila's contributions, the telescope is now positioned near the Sun-Earth L2 Lagrange point, almost one million miles beyond Earth's orbit. _____ the JWST's predecessor, the Hubble Telescope, is only about 340 miles above Earth's surface.

Which choice completes the text with the most logical transition?

- A) Therefore,
- B) By contrast,
- C) Similarly,
- D) Secondly,

21

Box modeling and contour modeling, methods used by digital artists to create three-dimensional elements for video games, typically require software to process geometric shapes numbering in the thousands. _____ these approaches are more economical than wire model methods, which require more powerful and expensive processors to manage polygons numbering in the millions.

Which choice completes the text with the most logical transition?

- A) Specifically,
- B) For example,
- C) Instead,
- D) As such,

22

The total solar eclipse of June 5, 1302 BCE, was famously interpreted as a warning to the Chinese emperor. Another memorable solar eclipse occurred on April 21, 899 BCE, but unlike the 1302 BCE eclipse, the 899 BCE eclipse was annular. _____ the Moon didn't cover the Sun completely, instead creating an annulus, or "ring of fire."

Which choice completes the text with the most logical transition?

- A) That is,

- B) Nonetheless,
- C) Meanwhile,
- D) For example,

23

- While researching a topic, a student has taken the following notes:
- Ezshwan Winding is a Hungarian American artist who specializes in encaustic painting, which follows a multistep process.
- Step 1: select and prepare the painting surface (often wood).
- Step 2: mix melted wax and resin together and add pigment for color to create the encaustic medium.
- Step 3: spread the medium on the surface in layers, applying heat to allow each layer to soften and fuse with the previous layers.
- Step 4: use various tools to carve patterns into the painting.

The student wants to describe the process of making and applying the encaustic medium. Which choice most effectively uses relevant information from the notes to accomplish this goal?

- A) The artist creates the medium from wax, resin, and pigment and then spreads it onto a painting surface in layers, heating the layers so that they soften and fuse together.
- B) Using various tools, the artist mixes the wax and resin, which fuse together in layers.
- C) The artist spreads wax, resin, and pigment onto the encaustic medium (often wood), then applies heat so that they soften and fuse to the previous layers.
- D) After adding pigment for color, the artist applies a mix of wax and resin to a painting surface, at which point patterns are carved into it.

24

While researching a topic, a student has taken the following notes:

- The Tijuana Slough National Wildlife Refuge (NWR) is a protected natural area in California.
- It encompasses 1,023 acres.
- It was established to safeguard the habitat of the light-footed clapper rail, an endangered species.
- The Tijuana Slough NWR is managed by the US Fish & Wildlife Service.
- The US Fish & Wildlife Service limits human activities in the area.

The student wants to indicate the size of the Tijuana Slough NWR. Which choice most effectively uses relevant information from the notes to accomplish this goal?

- A) The Tijuana Slough NWR is a natural area in California, home to the light-footed clapper rail.
- B) A protected natural area, the Tijuana Slough NWR encompasses 1,023 acres of land in California.
- C) Home to the light-footed clapper rail, California's Tijuana Slough NWR is managed by the US Fish & Wildlife Service.
- D) The Tijuana Slough NWR is a protected natural area managed by the US Fish & Wildlife Service, which limits human activities there.

25

While researching a topic, a student has taken the following notes:

- Jacob Lawrence was a US painter best known for The Migration Series (1940-41).
- The Migration Series portrays scenes from the Great Migration of African Americans from the rural South to cities in the North and Midwest.
- The series consists of 60 colorful semiabstract paintings, numbered 1 through 60.
- The odd-numbered paintings are on display at the Phillips Collection in Washington, DC.
- The even-numbered paintings are on display at the Museum of Modern Art in New York City.
- Painting #12 depicts people buying tickets in a crowded train station.

The student wants to indicate where to go to view Painting #12 from Lawrence's Migration Series. Which choice most effectively uses relevant information from the notes to accomplish this goal?

- A) Depicting a crowded train station, Painting #12 from The Migration Series is on display at the Museum of Modern Art in New York City.
- B) In Painting #12 and the other works of The Migration Series, Lawrence painted African Americans going from the rural South to cities in the North and Midwest.
- C) The 60 colorful semiabstract paintings of Lawrence's series can be viewed in two places: the Phillips Collection in Washington, DC, and the Museum of Modern Art in New York City.
- D) To view an even-numbered painting from Lawrence's Migration Series, such as the one that depicts people buying train tickets, one must go to Washington, DC

26

While researching a topic, a student has taken the following notes:

- River House is an Ancestral Puebloan dwelling site located in southeastern Utah.
- It was built under a rock overhang and inhabited from approximately 910-1200 CE.
- The overhanging rock ledges offered protection from heavy rain and snow.
- Chimney Rock is an Ancestral Puebloan dwelling site located in southwestern Colorado.
- It was built on relatively flat terrain and inhabited from approximately 925-1125 CE.
- This level surface allowed for the construction of large terraced buildings.

The student wants to explain an advantage of the River House dwelling site. Which choice most effectively uses relevant information from the notes to accomplish this goal?

- A) Since it was built under a rock overhang, River House was naturally protected from heavy rain and snow.
- B) The location of River House, an Ancestral Puebloan dwelling site in southeastern Utah, provided an advantage to its inhabitants.
- C) Located in southeastern Utah, River House is an Ancestral Puebloan dwelling site that was inhabited from approximately 910-1200 CE.
- D) The relatively flat terrain on which River House was built allowed for the construction of large terraced buildings.

27

While researching a topic, a student has taken the following notes:

- Kepler's first law of planetary motion states that the orbit of a planet around the Sun is an ellipse.

- The law also states that, in an elliptical orbit, the object being orbited is one of the ellipse's foci.
- Kepler's laws of planetary motion also apply to natural satellites (e.g.. moons).
- Mimas is a moon of Saturn that orbits the planet in 0.94 Earth days on average.
- Mimas's orbit is elliptical.

The student wants to provide an explanation and example of Kepler's first law of planetary motion. Which choice most effectively uses relevant information from the notes to accomplish this goal?

- A) Kepler's first law of planetary motion, which describes the orbits of Saturn and other planets in the solar system, states that the object being orbited is one of the ellipse's foci.
- B) Saturn's moon Mimas completes an orbit in 0.94 Earth days on average, a clear example of Kepler's first law of planet arymotion, which describes the elliptical orbit of planets.
- C) Kepler's first law of planetary motion states that the orbit of a planet around the Sun is an ellipse; for example, planetary satellites orbit their planets in an elliptical fashion.
- D) Mimas's orbit of Saturn is elliptical, demonstrating Kepler's first law of planetary motion, which describes the elliptical orbit of planets.

Math Module 1

22 QUESTIONS

1

Julia purchased 800 feet of fencing. She used 60% of this fencing to surround a vegetable garden. How many feet of fencing did Julia use to surround the vegetable garden?

- A) 12
- B) 30
- C) 480
- D) 740

2

Which expression is equivalent to $13(x^2 - 7)$?

- A) $13x^2 - 91$
- B) $13x^2 - 20$
- C) $13x^2 - 7$
- D) $13x^2 + 6$

3

1, 4, 7, 10, 33

What is the mean of the data shown?

- A) 7

- B) 11
- C) 17
- D) 33

4

A sleep study consisted of 59 participants, of which 53 participants each had an average of more than 120 minutes of rapid eye movement (REM) sleep per night. If a participant from this sleep study is selected at random, what is the probability of selecting a participant that had an average of more than 120 minutes of REM sleep per night?

- A) 53 / 100
- B) 59 / 100
- C) 53 / 59
- D) 59 / 53

5

Air temperature	Wind chill temperature at wind speed 15 mph	Wind chill temperature at wind speed 45 mph
26°F	14°F	7°F
30°F	19°F	12°F
34°F	24°F	18°F

For certain air temperatures, the table gives wind chill temperatures for two different wind speeds. According to the table, what is the wind chill temperature, in degrees Fahrenheit ($^{\circ}\text{F}$), when the air temperature is 26°F and the wind speed is 15 miles per hour (mph)? (Disregard the degree symbol when entering your answer)

6

A soccer team's goal is to earn at least \$1,320 by selling coupon books. The team earns \$12 from selling each coupon book. Which of the following inequalities describes all possible values for the number of coupon books, n , the team can sell to meet the goal?

- A) $n + 12 \leq 1,320$
- B) $n + 12 \geq 1,320$
- C) $12n \leq 1,320$
- D) $12n \geq 1,320$

7

$$2.5c + 5d = 60$$

The given equation describes the relationship between the number of cats, c , and the number of dogs, d , that can be cared for at a pet care business during a week. If the business cares for 12 dogs during a week, how many cats can it care for during this week?

- A) 0
- B) 5
- C) 30

D) 60

8

$$-(3x - 7)^2 = p + 17$$

In the given equation, p is an integer constant. The equation has no real solution. What is the least possible value of p ?

- A) -18
- B) -17
- C) -16
- D) -15

9



Note: Figures not drawn to scale.

For the triangles shown, triangle ABC is dilated by a scale factor of 5 to obtain triangle XYZ, where $d = 19$, what is the measure, in degrees, of angle X?

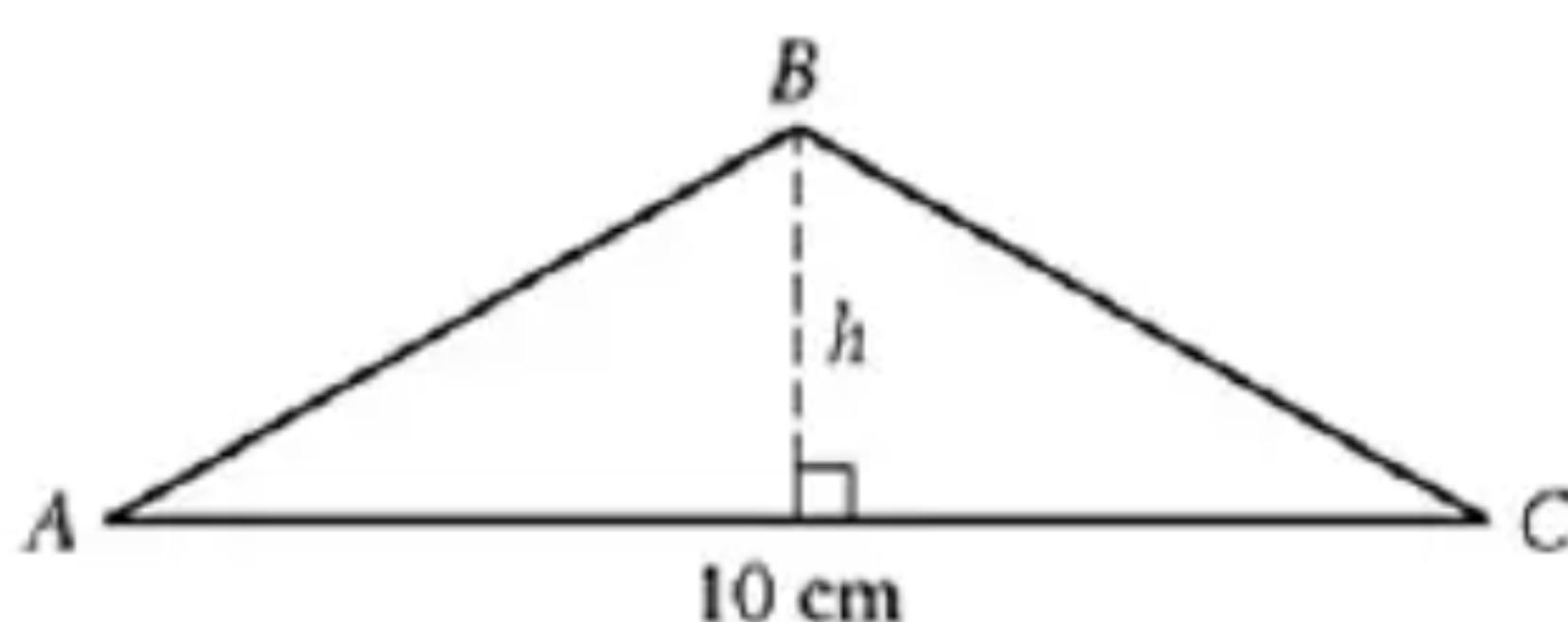
- A) 12
- B) 55
- C) 60
- D) 65

10

What is the y -intercept of the graph of $y = 16^{x+3}$ in the xy -plane?

- A) (0, 4,096)
- B) (0, 0)
- C) (0, 16)
- D) (0, 3)

11

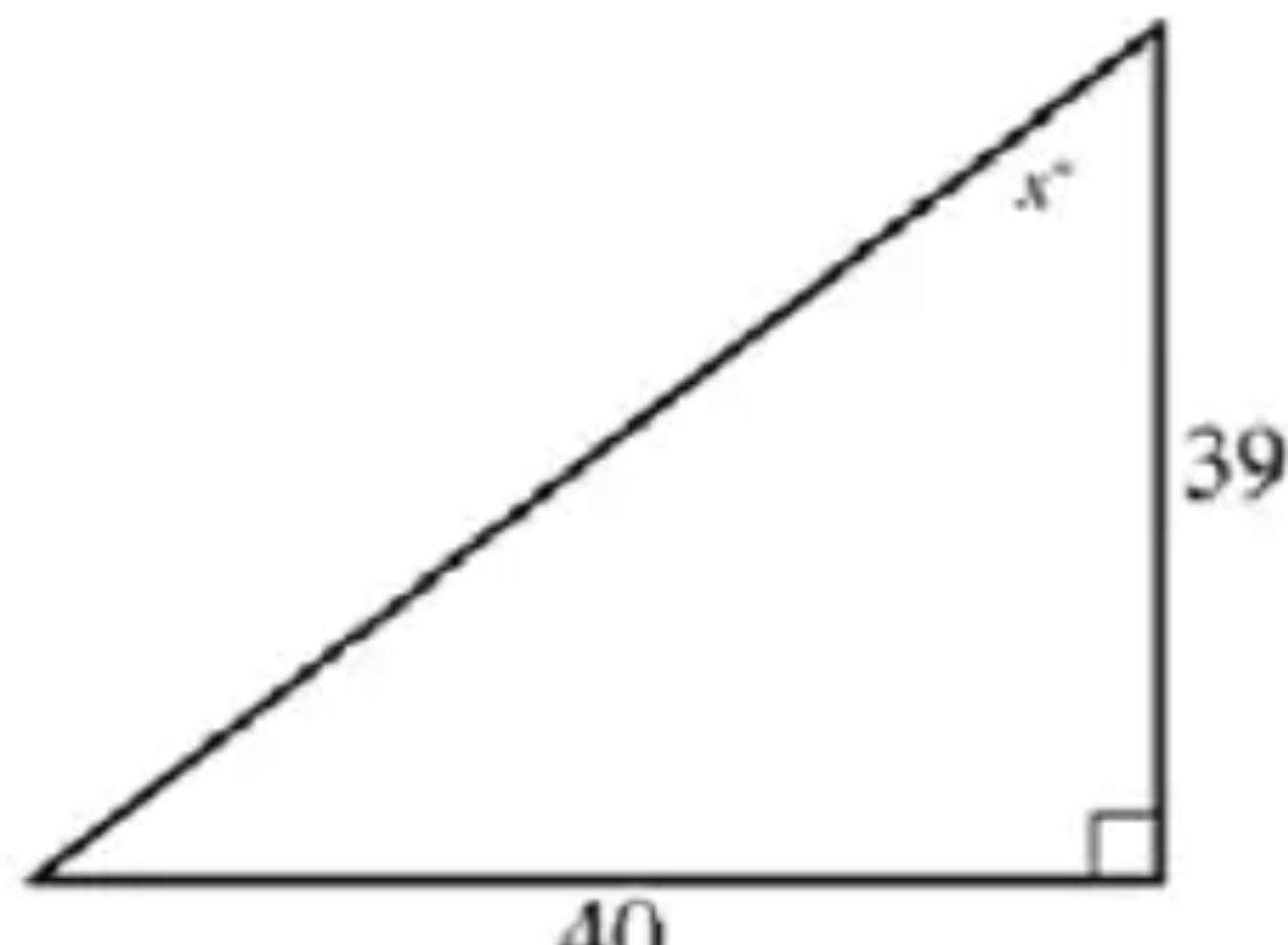


Note: Figure not drawn to scale.

The area of triangle ABC is 220 square centimeters. What is the height h , in centimeters, of this triangle?

- A) 10
- B) 22
- C) 44
- D) 88

12



In the right triangle shown, the value of $\tan x^\circ$ is $c/39$. What is the value of c ?

- A) 79
- B) 40
- C) 39
- D) 1

13

The graph of the polynomial function f in the xy -plane, where $y = f(x)$, has x -intercepts of $(-5, 0)$ and $(6, 0)$. Which of the following must be true?

- A) $f(0) = -5$
- B) $f(6) = -5$
- C) $f(-5) = 0$
- D) $f(-5) = 6$

14

$$(x-16)(x-10)(x+7)(x+17)=0$$

What is a positive solution to the given equation?

15

$$x^2 + y = 71$$

$$-5x + y = 5$$

The solutions to the given system of equations are of the form (x, y) . What is a possible value of x ?

- A) -11
- B) -6
- C) -5

D) 71

16

In the xy -plane, the graph of the equation $(x - 6)^2 + (y - 2)^2 = 36$ is a circle. The point $(12, c)$, where c is a constant, lies on this circle. What is the value of c ?

17

$$6(x-4) = (x-4) + 6$$

If x is the solution to the given equation, what is the value of $x - 4$?

18

$$(5/4)x + 2y = 17$$

$$(3/4)x + 2y = 15$$

The solution to the given system of equations is (x, y) . What is the value of $(11/4)x + 6y$?

A) 4

B) 6

C) 32

D) 47

19

The function h is defined by $h(x) = 14(2)^{-x} + 7$. What is the value of $h(3)$?

A) 42/4

B) 35/4

C) -77

D) -105

20

The graph of a line in the xy -plane passes through the point $(1, 8)$ and crosses the x -axis at the point $(7, 0)$. The line crosses the y -axis at the point $(0, b)$. What is the value of b ?

21

X _v	Y _v
-2 _v	19 _v
0 _v	31 _v
2 _v	43 _v

The table shows three values of g and their corresponding values of y . The linear relationship between x and y can be represented by an equation written in the form $Ax + By = C$, where A , B , and C are constants. What is the value of A/B ?

22

$$5x + 8y = 9$$

$$15x + 24y = 27$$

For each real number r , which of the following points lies on the graph of each equation in the xy -plane for the given system?

- A) $(r, -5r/8 + 9/8)$
- B) $(-5r/8 + 9/8, r)$
- C) $(-5r/8 + 9, 5r/8 + 27)$
- D) $(r/3 + 9, -r/3 + 27)$

Math Module 2

22 QUESTIONS

1

The function g is defined by $g(x) = -18 - 9x$. For what value of x does $g(x) = -216$?

- A) -26
- B) 22
- C) 26
- D) 1,926

2

The population of a certain city doubled every 25 years from 1660 to 1760. The population of this city was 208,000 in 1760. What was the population of this city in 1660?

- A) 13,000
- B) 26,000
- C) 104,000
- D) 416,000

3

The function $f(x) = 600(0.5)^{x/11}$ gives the predicted intensity of a beam $f(x)$, in number of photons in the beam, x millimeters below the surface of a certain material. What is the best interpretation of $f(11) = 300$?

- A) A beam at the surface of the material has a predicted intensity of 11 photons in the beam.
- B) A beam at the surface of the material has a predicted intensity of 300 photons in the beam.

- C) A beam 11 millimeters below the surface of the material has a predicted intensity of 300 photons in the beam.
- D) A beam 300 millimeters below the surface of the material has a predicted intensity of 600 photons in the beam.

4

For the linear function h , $h(0) = 0$ and $h(11) = 5$. Which equation defines h ?

- A) $h(x) = (5/11)x$
- B) $h(x) = (5/11)x + 5$
- C) $h(x) = (11/5)x$
- D) $h(x) = (11/5)x + 11$

5

Hassan put up wire fencing along each edge of a rectangular garden with a length of x feet and a width of y feet. Hassan put up a total length of 44 feet of wire fencing. Which equation represents this situation?

- A) $2x + 2y = 44$
- B) $x + y = 44$
- C) $2xy = 44$
- D) $xy = 44$

6

How many solutions does the equation $7x - 19 = 19 - 7x$ have?

- A) Zero
- B) Exactly one
- C) Exactly two
- D) Infinitely many

7

$$y > 17$$

$$4x + y < 21$$

The point $(x, 54)$ is a solution to the given system of inequalities in the xy -plane. Which of the following could be the value of x ?

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

8

A linear function f gives a company's profit, in dollars, for selling x items. The company's profit is \$190 when it sells 4 items, and its profit is \$670 when it sells 10 items. Which equation defines f ?

- A) $f(x) = 180x - 670$

- B) $f(x) = 67x$
- C) $f(x) = 80x - 10x$
- D) $f(x) = 80x - 130$

9

Which quadratic equation has no real solutions?

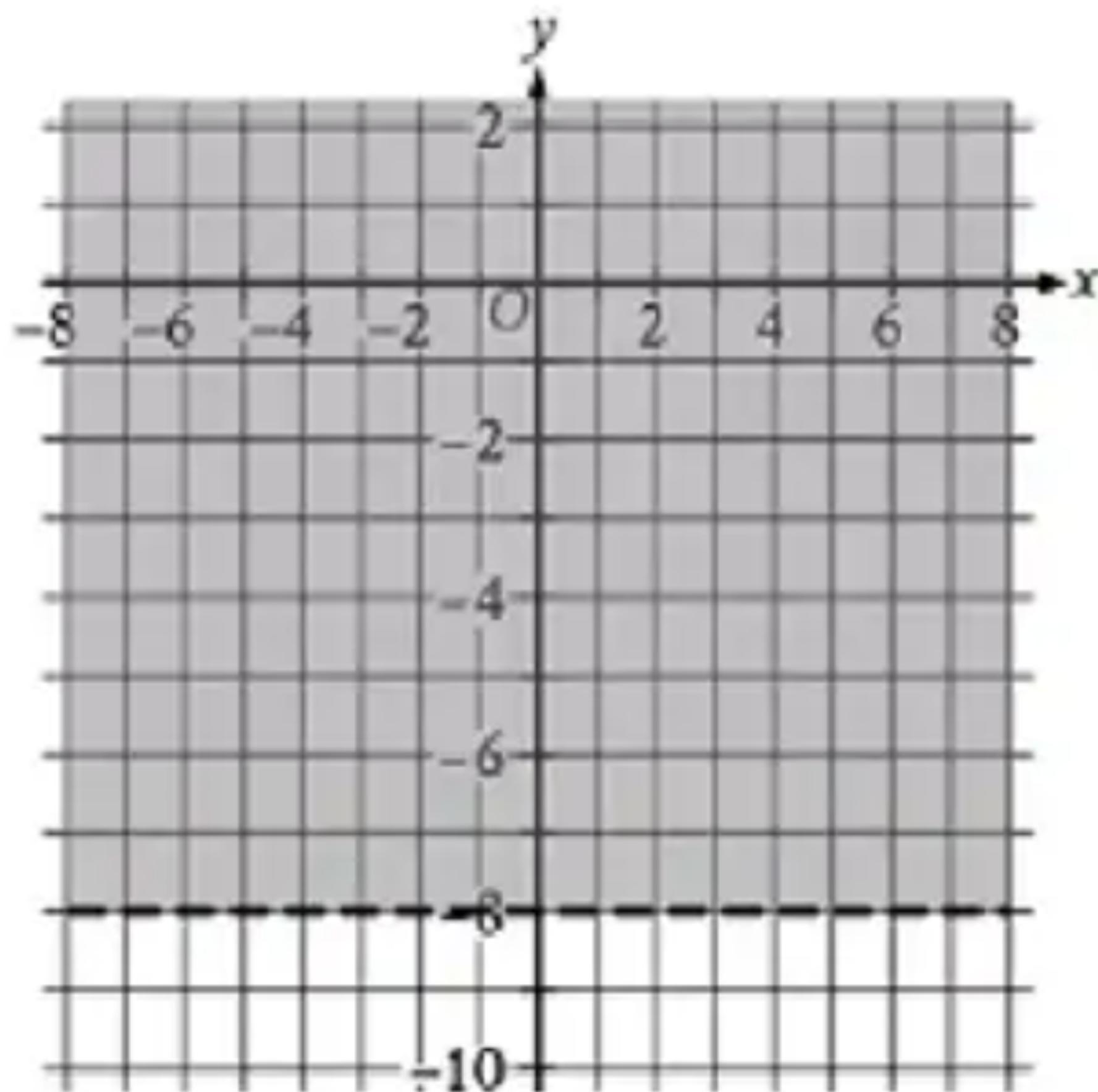
- A) $-2x^2 = 0$
- B) $-2x^2 + 2 = 0$
- C) $-2x^2 + 2x = 0$
- D) $-2x^2 + 2x - 2 = 0$

10

The circumference of the base of a right circular cylinder is 6π meters, and the height of the cylinder is 19 meters. What is the volume, in cubic meters, of the cylinder?

- A) 57π
- B) 114π
- C) 171π
- D) 684π

11



The shaded region shown represents the solutions to the inequality $ry < 133$, where r is a constant. What is the value of r ?

- A) 19
- B) 7
- C) -7
- D) -19

12

A carnival receives \$10 for each adult admission ticket sold and \$5 for each child admission ticket sold. On a particular day, the carnival received a total of \$4,100 from selling adult and child admission tickets. If 220 adult admission tickets were sold on that day, how many child admission tickets were sold?

13

$$y - x = 32$$

$$y = x^2 - 30x$$

The graphs of the equations in the given system intersect at the point (x, y) in the xy -plane. What is a possible value of y ?

- A) 32
- B) 33
- C) 63
- D) 64

14

$$c(r) = \left(\frac{2}{5}\right)(2\pi r)$$

The function c gives the partial length, in centimeters (cm), of the circumference of a circle with a radius that measures r cm. According to the function, for each increase of 18 cm in the length of the radius, this partial length of the circumference increases by $k\pi$ cm, what is the value of k ?

15

$$f(x) = 25(1.40)^{x/3}$$

For the given function f , the value of $f(x)$ increases by $p\%$ for every increase of x by 6. What is the value of p ?

- A) 40
- B) 49
- C) 80
- D) 96

16

The function k is defined by $k(s) = \sqrt{s + 110}$. If $k(53p) = p$, where p is a constant, what is the value of p ?

17

If $121x^2 = -110x + 56$, what is the value of $11x + 5$ where $11x + 5 > 0$?

18

A computer program models the population of a certain insect in an environment where the insect has no natural predators. According to the model, the estimated total mass of the population of insects at the end of every 5-week period is 158% greater than the estimated total mass of the population of insects at the end of the previous 5-week period. The estimated total mass of the population of insects at the end of 15 weeks is 627.7 grams. Which equation best represents this model, where M is the estimated total mass, in grams, of the population of insects at the end of t weeks?

- A) $M = 538.92 (1.58)^{5/t}$
- B) $M = 457.66 (2.58)^{5/t}$
- C) $M = 159.14 (1.58)^{5/t}$
- D) $M = 36.55 (2.58)^{5/t}$

19

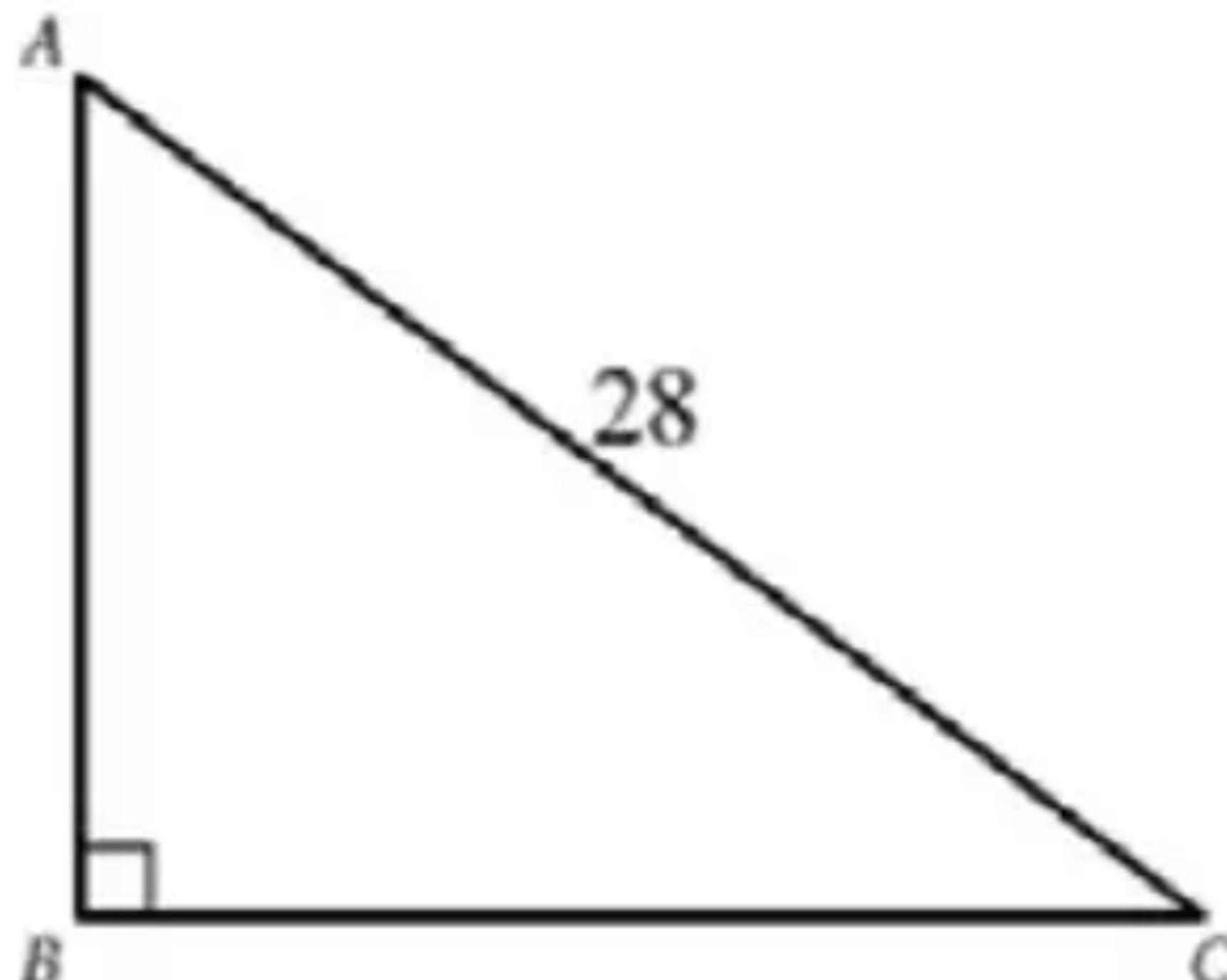
The value of an autographed baseball increased by 178% from the end of 2012 to the end of 2013 and then decreased by 21% from the end of 2013 to the end of 2014. What was the net percentage increase in the value of the autographed baseball from the end of 2012 to the end of 2014?

- A) 119.62%
- B) 140.62%
- C) 157.00%
- D) 236.38%

20

If n and k are numbers greater than 1 and $\sqrt[4]{n^5}$ is equivalent to $\sqrt[3]{k^2}$, for what value of a is n^{2a+1} equal to k ?

21



Note: Figure not drawn to scale.

For triangle ABC, the length of AB is 11 less than the length of AC. Point D (not shown) lies on AC such that BD (not shown) is perpendicular to AC. What is the value of BC/BD?

The area of a rectangular region is increasing at a rate of 280 square feet per hour. Which of the following is closest to this rate in square meters per minute? (Use 1 meter = 3.28 feet.)

- A) 0.43
- B) 1.42
- C) 15.31
- D) 26.03

Reading and Writing Module 1 Answers

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

Reading and Writing Module 2 Answers

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

Math Module 1 Answers

1. C
2. A
3. B
4. C
5. 14
6. D
7. A
8. C
9. C
10. A
11. C
12. B
13. C
14. 10; 16
15. A
16. 2
17. 1.2; 6/5

- 18. D
- 19. B
- 20. 3/28
- 21. -6
- 22. A

Math Module 2 Answers

- 1. B
- 2. A
- 3. C
- 4. A
- 5. A
- 6. B
- 7. D
- 8. D
- 9. D
- 10. C
- 11. D
- 12. 380
- 13. D
- 14. 14.4; $72/5$
- 15. D
- 16. 55
- 17. 9
- 18. D
- 19. A
- 20. $7/16$
- 21. $28/17$
- 22. A