Section 1, Module 1: Reading and Writing, Difficulty: easy

1. As used in the text, what does the word "testing" most nearly mean?
The following text is from Rudolfo Anaya's 1972 novel *Bless Me, Ultima*. The young narrator and his friend Cico are staring into the water of a stream in rural New Mexico.
The golden fish swam by gracefully, cautiously, as if testing the water after a long sleep in his subterranean waters. His powerful tail moved in slow strokes as he slid through the water towards us.
©1972 by Rudolfo Anaya
A. Wearing out
B. Defeating
C. Congratulating
D. Trying out

2. Which choice completes the text with the most logical and precise word or phrase?
A number of recording artists _____Indigenous music with other musical styles. For example, Wolastoq musician Jeremy Dutcher incorporated traditional Wolastoq songs into experimental pop on his album *Wolastoqiyik Lintuwakonawa*, and Tuscarora/Taíno singer-songwriter Pura Fé combined Indigenous rhythms and vocals with R&B on her album *Sacred Seed*.
A. fuse
B. analyze
C. acquire
D. exaggerate

3. Which choice completes the text with the most logical and precise word or phrase?
While modern composers may often get inspiration from past greats like Ludwig van Beethoven, the extent of their influences is broad. The music of Ernesto Lecuona, for example, can be said to _____elements of both the classical European tradition and the social, political, and cultural landscape of his native Cuba.
A. defy
B. neglect
C. foretell
D. exhibit

4. Which choice completes the text with the most logical and precise word or phrase?
Though most hoaxes perpetrated as jokes by mischievous users of Wikipedia, an online encyclopedia that almost anyone can freely edit, have quickly been detected and removed, a few invented entries, such as those for the town of Stone Ridge, Maryland, and the Civil War general George K. Broomhall, persisted on the site for many years before they were finally recognized as _____and deleted.
A. fictitious
B. conscientious
C. straightforward
D. profound

5. Which choice completes the text with the most logical and precise word or phrase?
In a garden, _____ the spread of unwelcome weeds such as chickweed can be difficult because weeds usually spread easily and quickly become unmanageable, making it hard to remove them completely.
A. saving
B. pretending
C. halting
D. retrieving

6. Which choice best describes the overall structure of the text?
In 1827, Rev. John Wilk and other free Black men in New York City founded *Freedom's Journal*, America's first Black-owned-and-operated newspaper. Wilk's accomplishment is just one example of the rich history of Black journalism in the United States. That history is preserved by the National Association of Black Journalists, which was founded in Washington, DC, in 1975 to support Black media professionals and honor people like Wilk.
A. It summarizes a theory about journalism, then explains how a journalistic practice has changed over time.
B. It mentions a specific achievement in Black journalistic history, then describes an organization dedicated to upholding that history.
C. It describes the career of a well-known figure in Black journalism, then compares that career to one of a figure who is lesser known.
D. It introduces the history of an organization honoring Black journalists, then suggests how that organization might recruit more members.

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

In 2018 Rong Jiahuan and colleagues published a study concluding that ocean acidification has a strong effect on the behavior of *Acanthopagrus schlegelii*, a species of fish. <u>However, Jiahuan and colleagues' study relied on a mean sample size of only 15 fish.</u> In a 2022 review of various scientists' conclusions about the impacts of ocean acidification on fish behavior, Josefin Sundin and colleagues caution that relying on such a relatively small sample size can increase the potential for biased analysis. Such analysis, in turn, can contribute to reports of exaggerated effects.
A. It introduces a detail about Jiahuan and colleagues' study that is addressed in the sentences that follow.
B. It emphasizes the threat of ocean acidification to *Acanthopagrus schlegelii* that is mentioned in the previous sentence.
C. It offers an alternative explanation for the behavior of *Acanthopagrus schlegelii* that is described in the previous sentence.
D. It states the conclusion reached by Jiahuan and colleagues that is elaborated on in the sentences that follow.

8. According to the narrator, what does her brother complain about?
The following text is from Angeline Boulley's 2021 novel *Firekeeper's Daughter*. The narrator is an Ojibwe teenager who runs in the morning before going to school. Levi is her younger brother.
My brother complains about my lengthy warm-up routine whenever he runs with me. I keep telling Levi that my longer, bigger, and therefore vastly superior

muscles require more intensive preparation for peak performance. The real reason, which he would think is dorky, is that I recite the correct anatomical name for each muscle as I stretch.
©2021 by Angeline Boulley
A. A song she sings while she runs in the morning
B. The late hour when she prefers to run
C. The lengthy warm-up routine she does before running
D. Fellow students she has befriended

9. According to the text, what do octopuses use to protect themselves?
Animals use many objects as tools to achieve goals more easily. Such goals include grooming, finding food, and protecting themselves. For a long time, people thought tool use was unique to primates. Octopuses and other animals, though, have busted the myth that tool use requires hands. Inventively, octopuses use two halves of a seashell to provide protection or a place to hide. Palm cockatoos also get creative. They use leaves to pad their beaks when opening nuts.
A. Sand
B. Leaves
C. Two halves of a seashell
D. Feathers from palm cockatoos

10. Based on the text, what do many legal experts believe about the trademark "Frisbee"?
Many people use the trademark "Frisbee" to refer generally to flying disc toys rather than specifically to products made by Wham-O, the company that owns the trademark. As many legal experts note, this may pose a problem for Wham-O. In the US, courts can cancel a trademark if they decide that its meaning is no longer specific to the trademark owner's products. If "Frisbee" were judged to be a generic term, as "escalator" was, other companies would be free to use it to promote similar products, making it harder for Wham-O to stand out from competitors.
A. It may be at risk of being canceled.
B. It is not especially memorable.
C. It has multiple unrelated meanings.
D. It is unlikely to be judged a generic term.

11. According to the table, in what year did India make the change mentioned in the text?

Year That Foreign Investors Were First Allowed to Purchase Shares

Country	Year
India	1986
Argentina	1989
Nigeria	1995

In the 1980s and 1990s, many countries began allowing foreign investors to purchase shares of companies based in those countries.
A. 1983
B. 1981

C. 1998
D. 1986

12. Which quotation from a historian would most directly support the student's argument?
Commedia dell'arte was a type of theater that emerged in Italy in the 1500s. It became popular throughout Western Europe. In commedia dell'arte, actors didn't have a script. Instead, they created their dialogue and actions onstage in the moment. Actors in these plays also usually wore stylized masks. In a research paper, a student argues that doing so affected how the actors portrayed their characters.

A. "Since their faces were hidden by masks, actors in commedia dell'arte used hand gestures and other movements of their bodies to display emotions."
B. "The use of masks in commedia dell'arte can be traced directly to the theater of ancient Rome."
C. "After almost vanishing in the 1800s, commedia dell'arte once again became popular in Italy and Great Britain for a brief period in the 1960s and 1970s."
D. "Masks are also worn in the traditional theater of China, India, and Maya communities in Mexico and Central America."

13. Which quotation from *The Age of Innocence* best illustrates the claim?

The Age of Innocence is a 1920 novel by Edith Wharton set in New York City in the 1870s. In the novel, Newland Archer attends an opera. Newland compares his intellect favorably to that of other men of New York City society who are in the audience: _____

A. "Thinking over a pleasure to come often gave [Newland] a subtler satisfaction than its realisation. This was especially the case when the pleasure was a delicate one, as his pleasures mostly were."
B. "Newland Archer felt himself distinctly the superior of these chosen specimens of old New York gentility; he had probably read more, thought more, and even seen a good deal more of the world, than any other man of the number."
C. "Singly [the men around Newland] betrayed their inferiority; but grouped together they represented 'New York,' and the habit of masculine solidarity made him accept their doctrine on all the issues called moral."
D. "To come to the Opera in a [carriage for hire] was almost as honourable a way of arriving as in one's own carriage."

14. Which quotation from a publication by a researcher would most effectively support the student's claim?

A student is writing an essay on the subject of cultured meat, which is grown in a laboratory and is intended to help reduce the number of livestock harvested for food. The student wants to make the case that cultured meat production may be useful in responding to an expected widespread change in the public's behavior.
A. "A growing population that is including significantly more meat in its diet will contribute to an increasing demand for meat products in the 21st century."

B. “Researchers who advocate for the development of lab-grown meat claim that it’s safer than conventional meat because it doesn’t come from animals raised in spaces that make them more vulnerable to illness.”
C. “Consumers tend to believe that using less packaging when selling meat products in stores would have a significant effect on the environment.”
D. “A difficulty in developing lab-grown meat that successfully imitates meat from livestock is in mimicking the way oxygen spreads through tissue in living animals.”

15. Which choice most logically completes the text?

Many Indigenous songs serve as repositories of ecological knowledge—e.g., Karen (*hta*) Hin Lad Nai songs about bees and Kaluli songs about rainforest sounds. In a study by ethnobiologist Dana Lepofsky et al., a song keeper for the Kwakwaka’wakw people provided access to ancient songs referring to the people’s creation of terraced intertidal gardens to foster clams for consumption. Cross-references of that information with both archaeological and paleoecological records have revealed significant increases in clam size and productivity concurrent with the most prevalent use of these clam gardens. This finding suggests that researchers should consider _____

A. the reliability of archaeological and paleoecological evidence that often underpins conclusions drawn from Indigenous songs.
B. whether the Kwakwaka’wakw people originated the method of cultivation detailed in the songs or adapted methods observed among other groups of Indigenous peoples.
C. the possibility that other songs of other Indigenous peoples transmit ecological information that has useful practical applications.
D. the strong implication that the beneficial effects are primarily attributable to ecological factors unrelated to the activities of the Kwakwaka’wakw people.

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

Sunita Williams, a US astronaut, has gone on seven spacewalks. During _____ spacewalks, Williams performed important tasks outside the spacecraft, such as installing new equipment.
A. that
B. these
C. this
D. one

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

NASA’s *Opportunity* rover first touched down on Mars on January 25, 2004. The rover spent over fourteen years gathering information about Mars’s rocky surface. Scientists playfully _____one of the rocks it found Edmund.
A. named
B. is naming
C. has named
D. names

18. Which choice completes the text so that it conforms to the conventions of Standard English?
Most people are familiar with the song "Happy Birthday" because _____Few, however, may know the song's origin. The tune began as "Good Morning to All," a song written by sisters Mildred and Patty Hill in the early 1890s.
A. it is the most frequently sung song in the English language?
B. it is the most frequently sung song in the English language.
C. is it the most frequently sung song in the English language.
D. is it the most frequently sung song in the English language?

19. Which choice completes the text so that it conforms to the conventions of Standard English?
Following her debut album release in 2002, Mexican singer-songwriter Natalia Lafourcade quickly shot to fame. By 2023, she _____one of the most celebrated musicians in Latin America, having released twelve albums and won seventeen Latin Grammy awards—more than any other female artist in history.
A. will become
B. had become
C. will have become
D. becomes

20. Which choice completes the text so that it conforms to the conventions of Standard English?
In the Suzuki method, classical pieces like Franz Schubert's "Wiegenlied" are taught to beginning music students as young as three, while students of traditional methods often only _____such songs at the age of five.
A. to begin learning
B. having begun to learn
C. beginning to learn
D. begin learning

21. Which choice completes the text so that it conforms to the conventions of Standard English?
In this chapter, we will focus on Gwendolyn Brooks's poem "An Aspect of Love, Alive in the Ice and Fire," paying special attention to its first line: "In a package of minutes there is this We." We _____our attention next to the works of Ntozake Shange and James Baldwin, two other poets associated with the Black Arts movement.
A. will have turned
B. turned
C. had turned
D. will turn

22. Which choice completes the text with the most logical transition?

When the first railroads were built in Australia in the 1800s, a variety of track sizes (gauges) were used across the continent, resulting in what historians call the "railway gauge muddle." The Mackay Railway line in Queensland used narrow tracks. _____the Yarra Valley Railway line in Victoria used broad gauge tracks.
A. For instance,

B. By contrast,
C. In sum,
D. Similarly,

23. Which choice completes the text with the most logical transition?
According to Portuguese researcher Isabel C.F.R. Ferreira, the syringic acid found in almond mushrooms can protect human cells from damage. _____the acid combats free radicals, a type of unstable molecule that can harm healthy cells in the human body.
A. By contrast,
B. Thus,
C. To be exact,
D. Still,

24. Which choice completes the text with the most logical transition?
On June 10, 1963, Sarvepalli Radhakrishnan received a ticker-tape parade in New York City in recognition of his status as president of India. Of the 206 ticker-tape parades held between 1886 and 2022, a number were for international leaders. _____ Radhakrishnan's parade was one of 73 honoring foreign heads of state.
A. Specifically,
B. Nevertheless,
C. Therefore,
D. In addition,

25. The student wants to identify what causes meanders. Which choice most effectively uses relevant information from the notes to accomplish this goal?

While researching a topic, a student has taken the following notes:
•A U-shaped curve in a river channel is called a meander.
•A meander forms when water erodes sediment from one side of the riverbank and redeposits that sediment on the opposite side.
•Meanders will gradually change shape and migrate downstream over time.
•A river with high sinuosity has many meanders, and a river with low sinuosity has few.
•The Burhi Gandak River in India has high sinuosity.
A. High sinuosity is caused by the formation of many meanders, or curves, in a riverbank over time.
B. The erosion and redepositing of sediment from one side of a riverbank to the other forms meanders, or curves, over time.
C. The meanders in the Burhi Gandak River will change shape and shift downstream over time.
D. Over time, many meanders have formed in the Burhi Gandak River, a river in India with high sinuosity.

26. The student wants to explain an advantage of the transit method. Which choice most effectively uses relevant information from the notes to accomplish this goal?

While researching a topic, a student has taken the following notes:
•The exoplanet GJ 357 b (31 light-years from Earth) doesn't emit enough light to be observed by Earth- or space-based telescopes.

•Astronomers were able to detect the exoplanet indirectly by the transit method of planetary detection.
•In this method, astronomers analyzed the periodic dimming of the light emitted by a distant star.
•They determined that this dimming was caused by the orbit of an unseen exoplanet (GJ 357 b) passing between the star and the observation point.
•As of February 2024, the transit method had been used to detect 4,153 exoplanets.

A. The transit method of planetary detection was used to detect GJ 357 b, an exoplanet located 31 light-years from Earth.
B. In the transit method, astronomers observe the light emitted by a distant star for signs of dimming, which is caused by the orbit of an unseen exoplanet passing between the star and the observation point.
C. Used to detect exoplanets by the periodic dimming they cause in the light of the stars they orbit, the transit method allows for the discovery of distant exoplanets not bright enough to be observed directly.
D. As of February 2024, the transit method of planetary detection had been used to discover 4,153 exoplanets, including GJ 357 b.

27. The student wants to emphasize a difference between "Waterfalls" and "Imagine." Which choice most effectively uses relevant information from the notes to accomplish this goal?

While researching a topic, a student has taken the following notes:
•In music theory, the term "key" refers to the set of musical notes that forms the foundation of a piece of music.
•In *On the Sensations of Tone* (1863), German physicist Hermann von Helmholtz describes the moods of various musical keys.
•He describes the key of D flat major as expressing "fullness of tone."
•He describes the key of C major as "expressive of innocence."
•"Waterfalls" (1995) by TLC is a song written in D flat major.
•"Imagine" (1971) by John Lennon is a song written in C major.

A. "Waterfalls" is written in the key of D flat major, while "Imagine" is written in C major.
B. Helmholtz describes the mood of D flat major as expressing "fullness of tone" and the mood of C major as "expressive of innocence."
C. D flat major is the key in which "Waterfalls" by TLC was written, and its mood has been described as expressing "fullness of tone."
D. In *On the Sensations of Tone*, Helmholtz describes the mood of various keys, including D flat major, which he describes as expressing "fullness of tone."

Section 1, Module 1: Reading and Writing, Difficulty: Hard

1 Which choice completes the text with the most logical and precise word or phrase? Noah Fierer and colleagues _____pots of sterilized soil with slurries of live microbes collected from soil in five sites across Colorado, including areas of ponderosa pine forest and dry pasture. Fierer and team then grew mustard plants in the pots to see if the different microbial slurries affected levels of spicy glucosinolates like 3-methylthiopropyl in the plants' seeds.

A. populated

B. precluded
C. sanitized
D. estimated

2. Which choice completes the text with the most logical and precise word or phrase?
The collectibles market is one of the most difficult segments of the consumer economy to _____. Few economists would have predicted, for example, that the prices of vintage movie posters would soar in the 2010s, but soar they did.
A. forecast
B. avoid
C. exchange
D. monitor

3. Which choice completes the text with the most logical and precise word or phrase?
Derived from research conducted with factory workers from 1924 to 1933, the Hawthorne effect suggests that participants' awareness that they are being studied alters their behavior and influences study outcomes. Since then, several researchers have claimed to invalidate this phenomenon, positing that the Hawthorne effect cannot be _____because attempts to detect it invariably involve faulty research methods.
A. inculcated
B. rectified
C. substantiated
D. hypothesized

4. Which choice completes the text with the most logical and precise word or phrase?
Paleontologists think that Anhanguera, Saltasaurus, and other long-extinct pterosaurs and sauropods may have breathed using air sacs connected to tubelike extensions inside the animals' bones. Such structures are found in modern birds, which is why some paleontologists treat the respiratory systems of birds as _____those of Anhanguera, Saltasaurus, and other pterosaurs and sauropods.
A. emissaries for
B. subordinates of
C. harbingers of
D. proxies for

5. Which choice best describes the overall structure of the text?
Advancements like the emergence of glassmaking in Mesopotamia circa 3500 BCE are overemphasized in innovation studies, contributing to the idea that technological change always brings greater complexity. Research by Nathaniel Erb-Satullo reveals an important exception: gold metallurgy flourished in the Caucasus in the Bronze Age, but a steep drop during that time (circa 1500 BCE) in objects featuring gold filigree (in which fine threads of gold are arranged in intricate patterns) and other sophisticated goldsmithing techniques suggests that simpler processes supplanted advanced methods.

A. It details the near-consensus among researchers in a particular field of study regarding how technology evolves and then indicates the controversial nature of a study challenging that broadly accepted view.
B. It summarizes the findings of several studies into the origins of a particular invention and then presents additional evidence from a more recent study that contradicts those findings.
C. It advances a claim made by researchers in one academic field about the nature of technological change and then critiques a contrasting claim presented by a researcher from a related academic field.
D. It explains that a particular interpretation of technological development has been perpetuated in an academic field and then provides a counterexample demonstrating that the interpretation isn't always accurate.

6. Which choice best states the main purpose of the text?
In their study of the steering muscles regulating sclerites (minute hardened structures) in the Drosophila (fruit fly) wing hinge, Johan M. Melis et al. used machine learning to devise a convolutional neural network (CNN) model capable of predicting the pattern of wing motion produced by the maximum activity of the muscles. The CNN model's output aligned with results of prior studies by other researchers measuring muscle activity patterns directly—one of several indications, said Melis et al., that the model accurately represents important biomechanical processes underlying wing motion.

A. To account for Melis et al.'s reliance in their study on a CNN model in lieu of direct measurement
B. To provide an overview of how Melis et al. honed the accuracy of their CNN model
C. To present evidence from Melis et al.'s study in support of the efficacy of their CNN model
D. To compare results obtained by Melis et al. using their CNN model to prior results obtained from other researchers' models

7. Based on the text, why does Miguel accompany his brother to the sisters' house one day?
The following text is from Julia Alvarez's 2000 novel In the Name of Salomé. The narrator and her sister, daughters of a famous poet, are being tutored by Alejandro Román.
Our tutor, Alejandro Román, brought his younger brother, Miguel, to class one day. By now I was eighteen and had learned everything Alejandro had to teach me, so I was glad for a new face. Miguel was an aspiring poet, and he had heard from his brother that the Ureña girls were none other than the daughters of Nicolás Ureña, and they were smart as clockwork. Miguel was hoping not only to meet us but to make the acquaintance of the poet himself at Mamá's house.

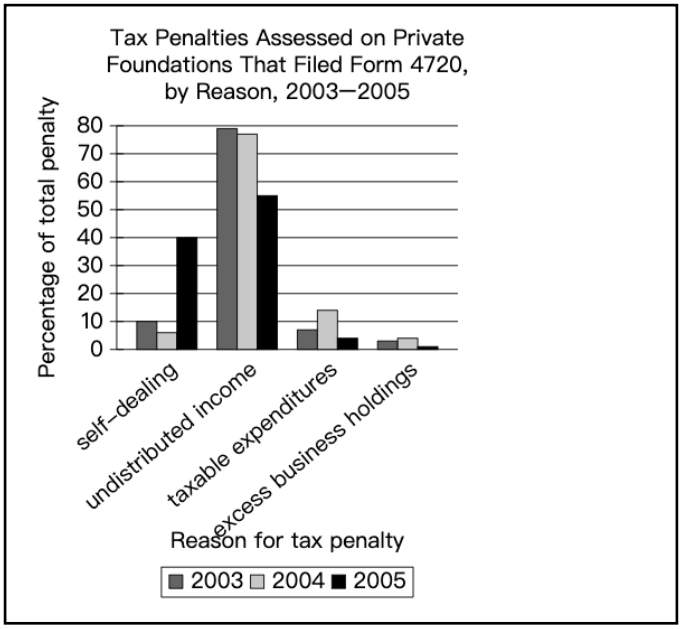
A. Miguel has not received formal instruction in poetry and wants to ask the sisters' famous father to be his mentor.
B. Miguel wants to recite his poems to the sisters and inquire about their perspectives on his work.
C. Miguel has learned all his brother can teach him and now desires to be taught by the sisters.

D. Miguel anticipates having the opportunity to be introduced to both the sisters and their father.

8. What does the text most strongly suggest about paintings by Roberts?
Motivated to sell as many paintings as possible, Alfred Hair, an influential figure among the landscape artists known as the Florida Highwaymen, pioneered "fast painting," which in part involved swift applications of paint. That many of Hair's acolytes, including Livingston Roberts, imitated the technique accounts in part for the impressionistic qualities that are now synonymous with the group's shared aesthetic. But not all Highwaymen fully embraced this approach; for instance, though Charles Walker was also prolific, his paintings were executed with greater attention to detail.

A. Roberts's reliance on the technique of fast painting likely accounts for his works being more aesthetically interesting than works by Walker are.
B. The lack of precision with which they were executed suggests that they are inferior to works by either Hair or Walker.
C. Although it is evident that Roberts adopted some of Hair's preferred techniques, Roberts's works are less derivative of works by Hair than is typically acknowledged.
D. Because of the manner in which they were created, they likely have visual qualities that are regarded as more typical of Florida Highwaymen paintings than the qualities in works by Walker are.

9. Which choice most effectively uses data from the graph to complete the assertion?



While US public charities, like Commonfund, must file Form 990 yearly with the IRS, private foundations, such as Lilly Endowment Inc., must file a different form, 990-PF. In addition, foundations that engage in certain prohibited activities must also file Form 4720 and pay a penalty tax on the money involved. Private foundations are prohibited from holding excess interests in a business enterprise, "self-dealing" (conducting activities that benefit foundation insiders), making taxable expenditures such as outlays for lobbying, and failing

to cross a required threshold in making charitable distributions from income. Out of the organizations that filed Form 990-PF in the years 2003–2005, _____ blank

A. those that were also required to file Form 4720 because they had excess holdings in a business enterprise paid, on average, a larger penalty than those organizations that filed Form 4720 because they engaged in self-dealing.
B. those that also filed Form 4720 collectively paid larger penalties for failing to meet the minimum charitable distribution requirement than for other reasons.
C. a smaller percentage of those that also filed Form 4720 did so because they engaged in self-dealing than the percentage of those that filed Form 4720 because they did not meet the minimum charitable distribution requirement.
D. those that also filed Form 4720 paid a larger penalty for failing to meet a minimum charitable distribution requirement than those organizations that filed Form 990 but also filed Form 4720 for the same reason.

10. Assuming that the Volga and Don basins supported similarly sized hunter-gatherer populations 6,500–8,000 years ago, which finding, if true, would most directly support Courel and colleagues' explanation?

Blandine Courel and her colleagues analyzed pottery fragments from thirty-five sites across the Volga and Don river basins to determine whether the ways in which hunter-gatherer societies used pottery in these regions around 6,500–8,000 years ago were influenced primarily by local food availability or primarily by cultural factors. Analysis of organic residues on the pottery fragments showed different prevailing uses for pottery in these locations—cooking and storing terrestrial animal protein at Volga sites and cooking and storing aquatic animal protein at Don sites—which Courel and colleagues attribute to cultural differences.

A. There were many more bodies of water in a comparably sized area in the Don basin than in the Volga basin.
B. In both the Volga and Don basins, most of the sites from which pottery has been recovered appear to have been seasonal fishing and hunting encampments rather than year-round settlements.
C. The people of the Volga basin acquired the techniques used to create pottery for cooking and storing food from the people of the Don basin.
D. Across the Volga and Don basins, people had broadly similar access to the same terrestrial and aquatic animal resources.

11. Which finding, if true, would most directly support the scientist's conclusion?

To boost the performance of oil-absorbing resins, which are used to remove oil and other organic compounds from wastewater, one team of materials researchers created a resin with a novel—albeit very expensive—monomer (a molecule that can chemically bond with analogous molecules to form polymers) synthesized from β-cyclodextrin. Other researchers have produced resins consisting of various much cheaper, commercially available methacrylate monomers, including one derived from benzyl methacrylate (BZMA). Testing all these resins' capacity to absorb toluene and trichloromethane, two organic compounds, a scientist concluded that when practical considerations were taken

into account, the BZMA-derived resin showed the greatest potential for use in wastewater cleanup.

A. Whereas the resin synthesized from β-cyclodextrin exhibited the highest absorption capacity for toluene, the BZMA-derived resin and other resins consisting of commercially available methacrylate monomers exhibited the highest absorption capacity for trichloromethane.
B. For both toluene and trichloromethane, the BZMA-derived resin exhibited similar absorption capacity as other resins consisting of commercially available methacrylate monomers and a slightly higher absorption capacity than the resin synthesized from β-cyclodextrin.
C. For both toluene and trichloromethane, the BZMA-derived resin exhibited only modestly lower absorption capacity than the resin synthesized from β-cyclodextrin but higher absorption capacity than other resins consisting of commercially available methacrylate monomers.
D. Relative to the resin synthesized from β-cyclodextrin and to other resins consisting of commercially available methacrylate monomers, the BZMA-derived resin exhibited superior absorption capacity for toluene but not for trichloromethane.

12. Which choice most logically completes the text?

Southwestern Kentucky's Livingston County is among the most rural counties in the United States: the US Census Bureau classified it as 95.4% rural in 2010. Researchers often struggle to recruit residents of counties like Livingston for inclusion in studies. Melissa Valerio and colleagues tested whether an approach called snowball sampling improves recruitment. Working in two rural counties, they recruited a few people (known as "seeds") with the characteristics desired for a proposed study and asked them to recruit additional participants from their social networks. Though the seeds were given minimal guidance, many more people they recruited had the desired characteristics for the study than would be expected by chance alone, most likely because _____

A. most seeds' social networks include some people who do not know one another and who share few characteristics.
B. the seeds' social networks tend to be somewhat smaller than the networks of people who do not live in rural areas.
C. the seeds' social networks include a high proportion of people who share characteristics with the seeds.
D. the characteristics that made the seeds desirable for inclusion in the proposed study may be unknown to some members of the seeds' social networks.

13. Which choice most logically completes the text?

In classical Greek and Roman mythology, female characters are typically cast as either villains lacking in psychological depth or passive victims who are marginal to these stories, which usually focus on the exploits of male characters. Recently, a subgenre has emerged in which writers reimagine these stories from the perspectives of their female characters, giving them agency and complex motivations. Purists argue that such efforts represent a distinctively modern tendency to impose our own values on past civilizations, obscuring those

civilizations' beliefs. Defenders of the subgenre counter that reimaginings of the myths for new cultural contexts are almost as old as the myths themselves, suggesting that _____

A. purists are overlooking a long tradition of adapting Greek and Roman myths to focus on female characters.
B. the complex motivations given to female characters in modern retellings of Greek and Roman myths reflect a recent shift toward psychological depth in fictional representation.
C. bringing female perspectives to the forefront is not indicative of a novel attitude regarding fidelity to Greek and Roman myths' ideologies.
D. modern writers' foregrounding of female characters is chiefly motivated by a desire to counterbalance the primacy of male perspectives among earlier adaptations of Greek and Roman myths.

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

The world's many geothermal power plants leverage an array of _____the Nga Awa Purua plant uses a flash steam system that transforms high-temperature geothermal fluid into steam; in Mexico, the Cerro Prieto plant's dry steam system pumps superheated steam from a reservoir; and in the US, the Mammoth plant's binary cycle system uses lower-temperature geothermal fluid in conjunction with a secondary fluid.
A. technologies, in New Zealand,
B. technologies in New Zealand:
C. technologies in New Zealand;
D. technologies: in New Zealand,

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

When a given term—"self-fulfilling prophecies" and "role models" are two well-known examples—is generally accepted and frequently used, _____ susceptible to obliteration by incorporation (OBI). In cases of OBI, widely used terms are rarely, if at all, attributed to the individuals who coined them.
A. this often becomes
B. it often becomes
C. they often become
D. these often become

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

In medieval Russia, squirrel pelts were used as a commodity currency. By using specific goods like squirrel pelts as common units of exchange, commodity currency economies streamline trade, which is why they often replaced barter economies. Barter economies eschew _____ that requires what economi st W.S. Jevons deems a "double coincidence of wants"—in other words, each trading party must want precisely what the other has.
A. currency, in favor of a direct trade system
B. currency in favor of a direct trade system

C. currency, in favor of a direct trade system,
D. currency—in favor of a direct trade system

17. Which choice completes the text so that it conforms to the conventions of Standard English?
In their attempt to create a quantum random number generator, K. Muhammed Shafi et al. used a continuous-wave diode laser to fire photons at a periodically-poled potassium titanyl phosphate (PPKTP) nonlinear crystal. A plano-convex lens _____the laser on the center of the 10-millimeter-long crystal ensured a spot size (a measure of the beam's diameter) of 85 micrometers.
A. focusing
B. focus
C. focuses
D. focused

18. Which choice completes the text so that it conforms to the conventions of Standard English?
For her installation The Last Cruze, photographer LaToya Ruby Frazier traveled to Lordstown, Ohio, where she documented the lives of workers at the local automobile plant. In the installation, text culled from a series of in-depth interviews with employees and their families _____sixty-seven gelatin silver prints, highlighting the collaborative, documentary nature of Frazier's work.

A. punctuating
B. punctuates
C. punctuate
D. are punctuated by

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

A single specimen of T. parkerae, collected at a depth of 1,856 fathoms (3,394 meters) in the South Pacific, and a single specimen of G. hirsuta, collected at a depth of 620 fathoms (1,134 meters) in the North Atlantic, have been preserved as exemplars of their respective _____former in a repository at Washington, DC's Museum of Natural History and the latter in a repository at London's Natural History Museum.
A. species; the
B. species. The
C. species, the
D. species, and the

20. Which choice completes the text with the most logical transition?

In a given rock formation, Fortunian rock from 538 million years ago might directly abut Rhaetian rock from 208.5 million years ago, with millions of years of material missing in between. _____time did not stand still during these intervening years; the unaccounted-for sedimentary material was likely removed from the stratigraphic record via erosion and weathering.
A. Of course,
B. In particular,
C. On the contrary,

D. As a result,

21. Which choice completes the text with the most logical transition?

Architect Victor Gruen, the designer of Pennsylvania's South Hills Village shopping mall, conceived of the mall as an indoor version of the European town square, a communal space that encouraged visitors to stroll and linger. _____ he designed South Hills Village with long, pedestrian-friendly promenades and ample seating areas clustered around fountains and greenery.
A. Regardless,
B. In addition,
C. Accordingly,
D. By contrast,

22. Which choice completes the text with the most logical transition?
Long thought to be sessile (immobile), adult Chelonibia testudinaria, barnacles that adhere to sea turtle shells, have been observed to shift slightly in position over time—a phenomenon that has been attributed to the barnacles' passive displacement by water currents. _____a research team found that adult C. testudinaria moved toward the heads of their sea turtle hosts and thus against the prevailing water flow, behavior consistent with self-initiated locomotion.
A. Undermining this explanation,
B. Contrary to this phenomenon,
C. Drawing a similar conclusion,
D. Confirming this hypothesis,

23. Which choice completes the text with the most logical transition?
In Annie Dillard's Pilgrim at Tinker Creek—where, early on, the author marvels at a single goldfish's delicate fins but later winces when imagining a horde of goldfish laying and eating their own eggs—Dillard struggles to reconcile the complicated juxtapositions of the natural world. _____nature's mesmerizing intricacy and pitiless harshness prove inextricably linked for Dillard, like "two branches of the same creek."
A. Moreover,
B. To that end,
C. Ultimately,
D. Hence,

24. Which choice most effectively uses information from the given sentences to emphasize a difference between the two movies?

- Silent films can be valuable historical documents of their time.
- Ninety percent of silent films made before 1930 are now lost.
- A film is considered lost when no remaining copies are known to exist.
- Director Howard Hawks's 1926 silent film The Road to Glory is lost.
- Director Oscar Micheaux's 1920 silent film Within Our Gates is archived at the UCLA Film & Television Archive in Los Angeles, California.

A. Howard Hawks's 1926 film The Road to Glory is among the many lost films of the era.

B. Howard Hawks's The Road to Glory (1926) and Oscar Micheaux's Within Our Gates (1920) are just two examples of silent films from the 1920s.
C. While Howard Hawks's The Road to Glory is considered lost to history, Oscar Micheaux's film Within Our Gates is archived at the UCLA Film & Television Archive in Los Angeles, California.
D. Oscar Micheaux's film Within Our Gates can be found at the UCLA Film & Television Archive in Los Angeles, California.

25. The student wants to contrast the type of neurotechnology Kernel develops with the type of neurotechnology Cortigent develops. Which choice most effectively uses relevant information from the notes to accomplish this goal?

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

- Founded in 2016, Kernel is a neurotechnology company that develops brain-computer interfaces (BCIs).
- BCIs interpret and execute brain signals to allow users to control external software or hardware with their thoughts.
- Founded in 2022, Cortigent is a neurotechnology company that develops neuroprostheses.
- Neuroprostheses act as replacement brain functions to restore the user's lost sensory, motor, or neural functions.
- Founded in 2012, MindMaze is a neurotechnology company that develops neuromodulation technologies.
- Neuromodulation technologies use neural interfaces to stimulate nervous system structures and influence neural activity.

A. Founded in 2016, Kernel develops technology for interpreting and executing brain signals, which, unlike Cortigent and MindMaze, is categorized as a neuroprosthestic.
B. Unlike Cortigent, which develops neurotechnology, Kernel develops BCIs.
C. BCIs allow users to control external software or hardware with their thoughts, but they don't restore sensory, motor, or neural functions as neuroprostheses do.
D. BCIs interpret and execute brain signals to allow users to control external software or hardware with their thoughts, whereas neuroprostheses influence neural activity.

26. The student wants to emphasize a difference between the two sculptures. Which choice most effectively uses relevant information from the notes to accomplish this goal?

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

- Time Matters... is a 2021 sculpture by German artist Jan Kuck.
- It is crafted from yellow neon lighting that spells out the title phrase ("time matters").
- Verdurous No. 2 is a 2020 sculpture by United States artist Annesta Le.
- It is crafted from green neon lighting that forms an abstract squiggle shape.

A. Jan Kuck and Annesta Le are artists who have used neon in their sculptures.
B. Unlike Kuck's sculpture, which spells out a phrase, Le's is an abstract squiggle shape.

C. Time Matters..., like Verdurous No. 2, is a sculpture.
D. Both Kuck's and Le's sculptures are crafted from neon lighting.

27. The student wants to emphasize a similarity between the two rivers. Which choice most effectively uses relevant information from the notes to accomplish this goal?

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

- The Zambezi River is in Africa.
- It ranks No. 32 among the longest rivers in the world.
- It is 2,740 kilometers long.
- The Vistula River is in Europe.
- It ranks No. 133 among the longest rivers in the world.
- It is 1,213 kilometers long.
-

A. The Zambezi River, ranked No. 32 among the longest rivers in the world, is 2,740 kilometers long.
B. The Vistula River is located in Europe, and it is 1,213 kilometers long.
C. The Zambezi and Vistula rivers are both ranked among the longest in the world.
D. At 1,213 kilometers long, the Vistula River ranks No. 133 among the longest rivers in the world.

Section2, Module 1: Reading and Writing, Difficulty: easy

229. The number of muskrat in a 133-acre area is estimated to be 2,128. What is the estimated population density, in muskrat per acre, of this area?

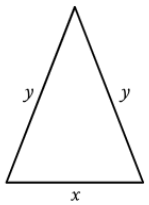
A. 16

B. 133

C. 149

D. 2,144

230.



Note: Figure not drawn to scale.

The triangle shown has one side with a length of x inches and two sides each with a length of y inches. The perimeter of the triangle is 63 inches. Which equation represents this situation?

A. $x + y = 63$

B. $x + 2y = 63$

C. $2x + y = 63$

D. $2x + 2y = 63$

231. A jar has 530 buttons, and 20% of these buttons are red. How many buttons in the jar are red?

232. There are a total of $5{,}600$ milligrams of phosphorus in a sample of soil. Each kilogram of this sample contains 800 milligrams of phosphorus. Which equation represents this situation, where x is the mass, in kilograms, of the sample of soil?

A. $x + 800 = 5{,}600$

B. $5{,}600x = 800$

C. $x + 5{,}600 = 800$

D. $800x = 5{,}600$

233. The function f is defined by $f(x) = \frac{1}{2}(x + 6)$. What is the value of $f(8)$?

A. 28

B. 14

C. 12

D. 7

234. If $8x + 7 = 32$, what is the value of $3(8x + 7)$?

A. 75

B. 96

C. 117

D. 128

235. Triangles ABC and DEF are congruent, where A corresponds to D, and B and E are right angles. The measure of angle A is 68°. What is the measure, in degrees, of angle F?

236. A savings account is opened with an initial deposit of $\$3{,}000$. The amount of money in the account t years after the initial deposit is given by the function $f(t) = 3{,}000(1.02)^{2t}$. Which of the following is the best interpretation of the statement "$f(8)$ is approximately equal to $4{,}118.36$" in this context?

A. 8 years after the initial deposit, the amount of money, in dollars, in the account is $4{,}118.36$.

B. Every 8 years, the amount of money, in dollars, in the account increases by $4{,}118.36$.

C. Every 8 years, the amount of money, in dollars, in the account decreases by $4{,}118.36$.

D. 8 years after the initial deposit, the amount of money, in dollars, in the account has increased by $4{,}118.36$.

237. $y = (x - 7)(x + 10)$

Which table gives four values of x and the corresponding values of y for the given quadratic equation?

A.

x	-1	0	1	2
y	10	17	24	31

B.

x	-1	0	1	2
y	-72	-70	-66	-60

C.

x	-1	0	1	2
y	-77	-70	-63	-56

D.

x	-1	0	1	2
y	18	10	4	0

238. $4x + 3 = rx + 6$

In the given equation, r is a constant. The equation has no solution. What is the value of r?

A. 4

B. 6

C. 7

D. 18

239. In the linear function f, $f(0) = 9$ and $f(2) = 9$. Which equation defines f?

A. $f(x) = 0$

B. $f(x) = 2$

C. $f(x) = 9$

D. $f(x) = x + 9$

240. An arborist studying forestland in Illinois estimates that there are at least 40 and no more than 50 hickory trees per acre in a certain forest. Which of the following best represents the arborist's estimate of the number of hickory trees, x, that are in a 3-acre section of this forest?

A. $150 \leq x \leq 300$

B. $120 \leq x \leq 150$

C. $43 \leq x \leq 53$

D. $40 \leq x \leq 50$

241. $x^2 + \left(\sqrt{k-2}\right)x + 37 = 0$

In the given equation, k is a constant. The equation has exactly one real solution. What is the value of k?

A. 150

B. 148

C. 146

D. 39

242. For the polynomial function p, the graph of $y = p(x)$ in the *xy*-plane crosses through the points $(-10, 0)$, $(0, 12)$, $(7, 0)$, and $(14, 0)$. What is the value of $p(0)$?

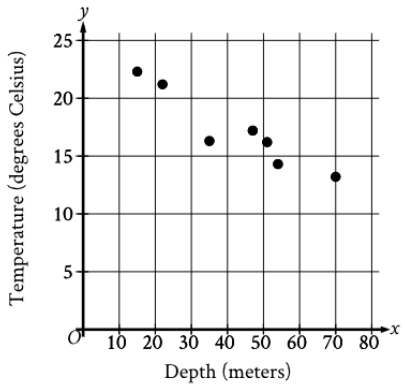
243. The graph of $-15x + 1.2y = -270$ in the *xy*-plane has intercepts at $(a, 0)$ and $(0, b)$. What is the value of ab?

244. $x + 15y = 40$

$$4x + 3y = 27$$

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

245. As part of a study on sedimentary habitats, the water temperature was recorded at different depths below the surface of the water in the northern Alboran Sea. The data shown in the scatterplot give the recorded temperature, in degrees Celsius, for 7 depths, in meters, below the surface of the water.



Which of the following is closest to the slope of a line of best fit for the data shown?

A. -8.02

B. -6.02

C. -2.17

D. -0.17

246. $a = \frac{3}{5}b + 6$

The given equation relates the positive numbers a and b. Which equation correctly expresses b in terms of a?

A. $b = \frac{3}{5}a + 6$

B. $b = \frac{3}{5}a - 10$

C. $b = \frac{5}{3}a - 6$

D. $b = \frac{5}{3}a - 10$

247. The measure of an angle, in radians, is $(99)(2)\pi$. What is the measure of the angle, in degrees?

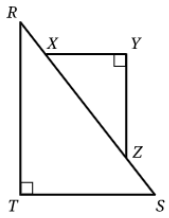
A. $(180)(99)(360)$

B. $(99)(2)(360)$

C. $(99)(360)$

D. $\left(\frac{99}{2}\right)(360)$

248.



Note: Figure not drawn to scale.

In triangles RST and XYZ shown, $\overline{XY}$ is parallel to $\overline{TS}$ and $\tan R = \frac{140}{171}$. What is the value of $\sin X$ in triangle XYZ?

A. $\frac{140}{311}$

B. $\frac{140}{221}$

C. $\frac{171}{221}$

D. $\frac{171}{140}$

249. $|x + 2| + 2 = |5x - 19| + 2$

What is the smallest solution to the given equation?

250. $y = 6x^2 - 48x + 98$
$y + 4 = 0$

How many solutions are there to the given system of equations?

A. There is exactly 1 solution.

B. There are exactly 2 solutions.

C. There are exactly 3 solutions.

D. There are no solutions.

Section2, Module 2: Reading and Writing, Difficulty: Hard

126. Which expression is equivalent to $\left(8x^2 + 5x + 9\right) - \left(8x^2 + 3\right)$?

A. 6

B. 12

C. $5x + 6$

D. $5x + 12$

128. $W(x) = 4x + 60$

The function W gives the total time, in minutes, it takes for a gardener to water x plants and mow the grass. According to the function, how long does it take the gardener to mow the grass, in minutes?

A. 4

B. 15

C. 60

D. 240

129. The function $f(x) = 55.20 - 0.16x$ gives the estimated surface water temperature $f(x)$, in degrees Celsius, of Lake Superior on the xth day of the year, where $220 \leq x \leq 360$. Based on the model, what is the estimated surface water temperature, in degrees Celsius, of Lake Superior on the 298th day of the year?

A. 55.20

B. 7.52

C. -0.16

D. -47.68

130. A company has a customer loyalty program. In January 2018, there were 300 customers enrolled in the loyalty program. For the next 24 months after January 2018, the total number of customers enrolled in the loyalty program each month was 2% greater than the total number enrolled the previous month. Which equation gives the total number of customers, c, enrolled in the company's loyalty program m months after January 2018, where $m \leq 24$?

A. $c = 300(0.02)^m$

B. $c = 300(1.02)^m$

C. $c = 300(1.2)^m$

D. $c = 300(2)^m$

131. $6x + 4 > y$

For which of the following tables are all the values of x and their corresponding values of y solutions to the given inequality?

A.

x	y
0	5
1	11
2	17

B.

x	y
0	4
1	12
2	18

C.

x	y
0	4
1	8
2	14

D.

x	y
0	3
1	9
2	15

132. A machine fills bags with approximately 15 ounces of sugar. To test the accuracy of the filling process, 343 bags of sugar were selected at random and weighed. Based on the sample, it is estimated that the average weight of all bags of sugar filled by the machine in an 8-hour period is 14.88 ounces, with an associated margin of error of 0.19 ounce. Which of the following is the best interpretation of this estimate?

A. Plausible values for the average weight of all bags of sugar filled by the machine are between 14.69 ounces and 15.07 ounces.

B. Plausible values for the average weight of all bags of sugar filled by the machine are less than 14.69 ounces or greater than 15.07 ounces.

C. The average weight of all bags of sugar filled by the machine is greater than 14.99 ounces.

D. The average weight of all bags of sugar filled by the machine is less than 14.99 ounces.

133. A container is in the shape of a right rectangular prism that is 2.0 centimeters (cm) wide, 19.0 cm long, and 25.0 cm tall. Which of the following is closest to the number of fluid ounces that are required to completely fill the container? $(\text{Use } 1.0 \text{ cubic centimeter} = 0.034 \text{ fluid ounces})$

A. 32

B. 900

C. $1{,}000$

D. $28{,}000$

134. In the *xy*-plane, line ℓ passes through the point $(0, 0)$ and is parallel to the line represented by the equation $y = 6x + 3$. If line ℓ also passes through the point $(8, d)$, what is the value of d?

135. $x(x + 6) - 112 = 3x(x - 8)$

What is the sum of the solutions to the given equation?

A. 2

B. 8

C. 14

D. 15

137. Data set A consists of 10 positive integers less than 60. The list gives 9 of the integers from data set A.

$$42, 46, 44, 42, 38, 39, 40, 47, 40$$

The mean of these 9 integers is 42. If the mean of data set A is an integer that is greater than 42, what is the value of the largest integer from data set A?

A. 43

B. 47

C. 52

D. 59

138. $x^2 - 40x + c = 0$

In the given equation, c is a constant. The equation has no real solutions if $c > n$. What is the least possible value of n?

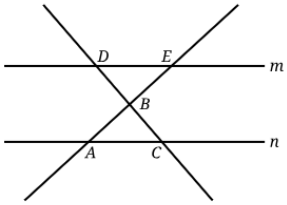
A. -400

B. -40

C. 40

D. 400

139.



Note: Figure not drawn to scale.

In the figure, line m is parallel to line n, and lines AE and CD intersect at point B. Which additional piece of information is sufficient to prove that triangle ABC is congruent to triangle EBD?

A. $AB = 16$ and $DB = 16$.

B. $AB = 16$ and $EB = 16$.

C. Triangles ABC and EBD are isosceles.

D. No additional information is necessary to determine that the two triangles are congruent.

140. $f(x) = 25(1.20)^{\frac{x}{4}}$

For the given function f, the value of $f(x)$ increases by $p\%$ for every increase of x by 8. What is the value of p?

A. 20

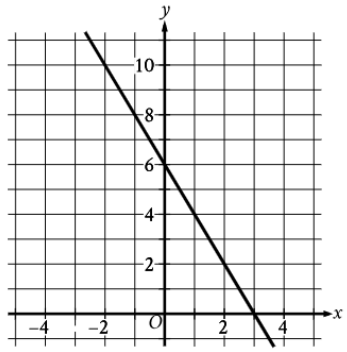
B. 31

C. 40

D. 44

142. A right square pyramid has a surface area of $100 + 20\sqrt{146}$ square inches, which includes a base area of 100 square inches. What is the height, in inches, of this pyramid?

141.



The graph of the linear function $y = f(x) + 17$ is shown. If c and d are positive constants, which equation could define f?

A. $f(x) = -d - cx$

B. $f(x) = d + cx$

C. $f(x) = d - cx$

D. $f(x) = -d + cx$

143. A circle in the *xy*-plane has its center at $(-2, 2)$. Line t is tangent to this circle at the point $(7, -5)$. Which of the following points also lies on line t?

A. $(0, \frac{9}{7})$

B. $(5, 11)$

C. $(14, 4)$

D. $(16, 2)$

145. Which of the following expressions has a factor of $x + 2b$, where b is a positive integer constant?

A. $2x^2 + 9x + 18b$

B. $2x^2 + 19x + 18b$

C. $2x^2 + 20x + 18b$

D. $2x^2 + 29x + 18b$

146. A rectangular region of land is divided into 88 square lots of equal area A, in square units. The length of the region is 5.5 times the width of the region. If the length of the region is $x\sqrt{A}$ units, what is the value of x?

147.

x	y
25	-11
27	9
29	-11

The table shows three values of x and their corresponding values of y, where $y = f(x) + 4$ and f is a quadratic function. What is the *y*-coordinate of the *y*-intercept of the graph of $y = f(x)$ in the *xy*-plane?