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SAT

PLEASE READ CAREFULLY BEFORE STARTING YOUR TEST:

Your Digital-SAT Diagnostic is about to begin. Please be sure all electronic devices are turned off and stowed out of sight. This test will take a total of 2 hours and 24 minutes, which includes a 10-min break after your second module of the Reading & Writing portion of the test. The whole test will consist of 4 modules, 2 for R+W and 2 for Math. The difficulty level (upper or lower) for your second module will be determined by how well you perform on your first module. You will need to answer at least 18 questions correctly on module 1 of the R +W to reach the upper level module for that section. You will need to answer at least 15 questions correctly on module 1 of the Math to reach the upper level module for that section. An answer key is provided at the end of this document to help you QUICKLY score your module and determine your next module level. Keep in mind, there will be 2 experimental/unscored questions in each module, highlighted gray - DO NOT count those in your total score for that module. IMPORTANT: you will complete only ONE second module for each section, the upper OR the lower, not both. To take this test accurately, you should have 1) A PRINTED ANSWER GRID, 2) SCRAP PAPER, 3) A PENCIL, AND 4) YOUR APPROVED CALCULATOR. You may also choose to set a timer on your desktop or laptop screen. Timing for each module is indicated at the beginning of that module. If you have accommodations, you may apply those accommodations as appropriate. A calculator can be used for all Math modules ONLY. While the test should be taken digital ONLY, your answer grid should be hard copy ONLY. If you would like a detailed SCORE REPORT for your test, please follow the instructions for the submission of your grids found at the end of this document. Unless you have any further questions (and those can be sent to perfectscoretestprep@gmail.com prior to the start of this test), you are now prepared to begin. Perfect Score Test Prep wishes you Good Luck and we look forward to playing a role in your upcoming test-taking journey! Please start your timer, as indicated on the next page, and BEGIN.

READING & WRITING
MODULE 1

LEVEL OF DIFFICULTY
MIXED

Time: 32 minutes

Reading and Writing

27 QUESTIONS

DIRECTIONS

The questions in this section address a number of important reading and writing skills. Each question includes one or more passages, which may include a table or graph. Read each passage and question carefully, and then choose the best answer to the question based on the passage(s).

All questions in this section are multiple-choice with four answer choices. Each question has a single best answer.

1

Researchers and conservationists stress that biodiversity loss due to invasive species is _____. For example, people can take simple steps such as washing their footwear after travel to avoid introducing potentially invasive organisms into new environments.

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

A) preventable
B) undeniable
C) common
D) concerning

2

It is by no means _____ to recognize the influence of Dutch painter Hieronymus Bosch on Ali Banisadr's paintings; indeed, Banisadr himself cites Bosch as an inspiration. However, some scholars have suggested that the ancient Mesopotamian poem *Epic of Gilgamesh* may have had a far greater impact on Banisadr's work.

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

A) substantial
B) satisfying
C) unimportant
D) appropriate

3

Astronomers are confident that the star Betelgeuse will eventually consume all the helium in its core and explode in a supernova. They are much less confident, however, about when this will happen, since that depends on internal characteristics of Betelgeuse that are largely unknown. Astrophysicist Sarafina El-Badry Nance and colleagues recently investigated whether acoustic waves in the star could be used to determine internal stellar states but concluded that this method could not sufficiently reveal Betelgeuse's internal characteristics to allow its evolutionary state to be firmly fixed.

Which choice best describes the function of the second sentence in the overall structure of the text?

A) It explains how the work of Nance and colleagues was received by others in the field.
B) It presents the central finding reported by Nance and colleagues.
C) It identifies the problem that Nance and colleagues attempted to solve but did not.
D) It describes a serious limitation of the method used by Nance and colleagues.

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CONTINUE

4

The mimosa tree evolved in East Asia, where the beetle *Bruchidius terrenus* preys on its seeds. In 1785, mimosa tress were introduced to North America, far from any *B. terrenus*. But evolutionary links between predators and their prey can persist across centuries and continents. Around 2001, *B. terrenus* was introduced in southeastern North America near where botanist Shu-Mei Chang and colleagues had been monitoring mimosa trees. Within a year, 93 percent of the trees had been attacked by the beetles.

Which choice best describes the function of the third sentence in the overall structure of the text?

A) It states the hypothesis that Chang and colleagues had set out to investigate using mimosa trees and *B. terrenus*.

B) It presents a generalization that is exemplified by the discussion of the mimosa trees and *B. terrenus*.

C) It offers an alternative explanation for the findings of Chang and colleagues.

D) It provides context that clarifies why the species mentioned spread to new locations.

5

Text 1

When companies in the same industry propose merging with one another, they often claim that the merger will benefit consumers by increasing efficiency and therefore lowering prices. Economist Ying Fan investigated this notion in the context of the United States newspaper market. She modeled a hypothetical merger of Minneapolis-area newspapers and found that subscription prices would rise following a merger.

Text 2

Economist Dario Focarelli and Fabio Panetta have argued that research on the effect of mergers on prices has focused excessively on short-term effects, which tend to be adverse for consumers. Using the case of consumer banking in Italy, they show that over the long term (several years, in their study), the efficiency gains realized by merged companies do result in economic benefits for consumers.

Based on the texts, how would Focarelli and Panetta (Text 2) most likely respond to Fan's findings (Text 1)?

A) They would argue that over the long term the expenses incurred by the merged newspaper company will also increase.

B) They would recommend that Fan compare the near-term effect of a merger on subscription prices in the Minneapolis area with the effect of a merger in another newspaper market.

C) They would encourage Fan to investigate whether the projected effect on subscription prices persists over an extended period.

D) They would claim that mergers have a different effect on consumer prices in the newspaper industry than in most other industries.

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6

The following text is from Jane Austen's 1811 novel *Sense and Sensibility*. Elinor lives with her younger sisters and her mother, Mrs. Dashwood.

> Elinor, this eldest daughter, whose advice was so effectual, possessed a strength of understanding, and coolness of judgment, which qualified her, though only nineteen, to be the counsellor of her mother, and enabled her frequently to counteract, to the advantage of them all, that eagerness of mind in Mrs. Dashwood which must generally have led to imprudence. She had an excellent heart;—her disposition was affectionate, and her feelings were strong; but she knew how to govern them: it was a knowledge which her mother had yet to learn; and which one of her sisters had resolved never to be taught.

According to the text, what is true about Elinor?

A) Elinor often argues with her mother but fails to change her mind.

B) Elinor can be overly sensitive with regard to family matters.

C) Elinor thinks her mother is a bad role model.

D) Elinor is remarkably mature for her age.

7

The following text is adapted from Charles W. Chesnutt's 1901 novel *The Marrow of Tradition*.

> Mrs. Ochiltree was a woman of strong individuality, whose comments upon her acquaintance[s], present or absent, were marked by a frankness at times no less than startling. This characteristic caused her to be more or less avoided. Mrs. Ochiltree was aware of this sentiment on the part of her acquaintance[s], and rather exulted in it.

Based on the text, what is true about Mrs. Ochiltree's acquaintances?

A) They try to refrain from discussing topics that would upset Mrs. Ochiltree.

B) They are unable to spend as much time with Mrs. Ochiltree as she would like.

C) They are too preoccupied with their own concerns to speak with Mrs. Ochiltree.

D) They are likely offended by what Mrs. Ochiltree has said about them.

8

The following text is adapted from William Shakespeare's 1609 poem "Sonnet 27." The poem is addressed to a close friend as if he were physically present.

> Weary with toil, I [hurry] to my bed,
> The dear repose for limbs with travel tired;
> But then begins a journey in my head
> To work my mind, when body's work's expired:
> For then my thoughts—from far where I abide—
> [Begin] a zealous pilgrimage to thee,
> And keep my drooping eyelids open wide,

What is the main idea of the text?

A) The speaker is asleep and dreaming about traveling to see the friend.

B) The speaker is planning an upcoming trip to the friend's house.

C) The speaker is too fatigued to continue a discussion with the friend.

D) The speaker is thinking about the friend instead of immediately falling asleep.

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CONTINUE

9

Black beans (*Phaseolus vulgaris*) are a nutritionally dense food, but they are difficult to digest in part because of their high levels of soluble fiber and compounds like raffinose. They also contain antinutrients like tannins and trypsin inhibitors, which interfere with the body's ability to extract nutrients from foods. In a research article, Marisela Granito and Glenda Álvarez from Simón Bolívar University in Venezuela claim that inducing fermentation of black beans using lactic acid bacteria improves the digestibility of the beans and makes them more nutritious.

Which finding from Granito and Álvarez's research, if true, would most directly support their claim?

A) When cooked, fermented beans contained significantly more trypsin inhibitors and tannins but significantly less soluble fiber and raffinose than nonfermented beans.

B) Fermented beans contained significantly less soluble fiber and raffinose than nonfermented beans, and when cooked, the fermented beans also displayed a significant reduction in trypsin inhibitors and tannins.

C) When the fermented beans were analyzed, they were found to contain two microorganisms, *Lactobacillus casei* and *Lactobacillus plantarum*, that are theorized to increase the amount of nitrogen absorbed by the gut after eating beans.

D) Both fermented and nonfermented black beans contained significantly fewer trypsin inhibitors and tannins after being cooked at high pressure.

10

Ablation Rates for Three Elements in Cosmic Dust, by Dust Source

Element	SPC	AST	HTC	OCC
iron	20%	28%	90%	98%
potassium	44%	74%	97%	100%
sodium	45%	75%	99%	100%

Earth's atmosphere is bombarded by cosmic dust originating from several sources: short-period comets (SPCs), particles from the asteroid belt (ASTs), Halley-type comets (HTCs), and Oort cloud comets (OCCs). Some of the dust's material vaporizes in the atmosphere in a process called ablation, and the faster the particles move, the higher the rate of ablation. Astrophysicist Juan Diego Carrillo-Sánchez led a team that calculated average ablation rates for elements in the dust (such as iron and potassium) and showed that material in slower-moving SPC or AST dust has a lower rate than the same material in faster-moving HTC or OCC dust. For example, whereas the average ablation rate for iron from AST dust is 28%, the average rate for _____

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

A) iron from SPC dust is 20%.

B) sodium from OCC dust is 100%.

C) iron from HTC dust is 90%.

D) sodium from AST dust is 75%.

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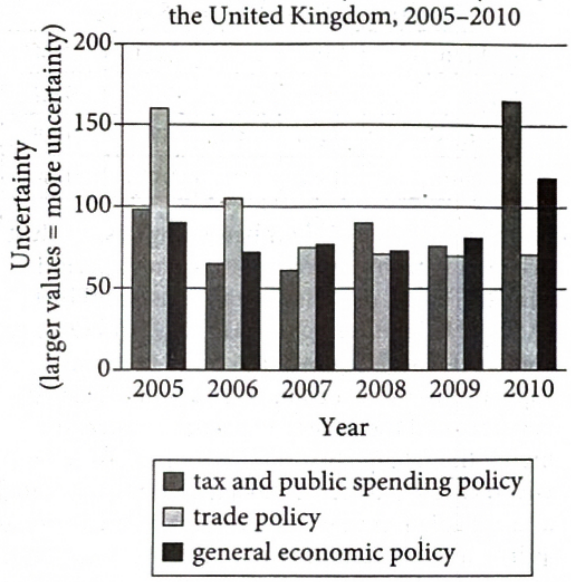
11

Economic Policy Uncertainty in the United Kingdom, 2005–2010



High levels of public uncertainty about which economic policies a country will adopt can make planning difficult for businesses, but measures of such uncertainty have not tended to be very detailed. Recently, however, economist Sandile Hlatshwayo analyzed trends in news reports to derive measures not only for general economic policy uncertainty but also for uncertainty related to specific areas of economic policy, like tax or trade policy. One revelation of her work is that a general measure may not fully reflect uncertainty about specific areas of policy, as in the case of the United Kingdom, where general economic policy uncertainty _____

Which choice most effectively uses data from the graph to illustrate the claim?

A) aligned closely with uncertainty about tax and public spending policy in 2005 but differed from uncertainty about tax and public spending policy by a large amount in 2009.

B) was substantially lower than uncertainty about tax and public spending policy each year from 2005 to 2010.

C) reached its highest level between 2005 and 2010 in the same year that uncertainty about trade policy and tax and public spending policy reached their lowest levels.

D) was substantially lower than uncertainty about trade policy in 2005 and substantially higher than uncertainty about trade policy in 2010.

12

Average Number and Duration of Torpor Bouts and Arousal Episodes for Alaska Marmots and Arctic Ground Squirrels, 2008–2011

Feature	Alaska marmots	Arctic ground squirrels
torpor bouts	12	10.5
duration per bout	13.81 days	16.77 days
arousal episodes	11	9.5
duration per episode	21.2 hours	14.2 hours

When hibernating, Alaska marmots and Arctic ground squirrels enter a state called torpor, which minimizes the energy their bodies need to function. Often a hibernating animal will temporarily come out of torpor (called an arousal episode) and its metabolic rate will rise, burning more of the precious energy the animal needs to survive the winter. Alaska marmots hibernate in groups and therefore burn less energy keeping warm during these episodes than they would if they were alone. A researcher hypothesized that because Arctic ground squirrels hibernate alone, they would likely exhibit longer bouts of torpor and shorter arousal episodes than Alaska marmots.

Which choice best describes data from the table that support the researcher's hypothesis?

A) The Alaska marmots' arousal episodes lasted for days, while the Arctic ground squirrels' arousal episodes lasted less than a day.

B) The Alaska marmots and the Arctic ground squirrels both maintained torpor for several consecutive days per bout, on average.

C) The Alaska marmots had shorter torpor bouts and longer arousal episodes than the Arctic ground squirrels did.

D) The Alaska marmots had more torpor bouts than arousal episodes, but their arousal episodes were much shorter than their torpor bouts.

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CONTINUE

13

Employment by Sector in France and the United States, 1800–2012
(% of total employment)

Year	Agriculture in France	Manufacturing in France	Services in France	Agriculture in US	Manufacturing in US	Services in US
1800	64	22	14	68	18	13
1900	43	29	28	41	28	31
1950	32	33	35	14	33	53
2012	3	21	76	2	18	80

Rows in table may not add up to 100 due to rounding.

Over the past two hundred years, the percentage of the population employed in the agricultural sector has declined in both France and the United States, while employment in the service sector (which includes jobs in retail, consulting, real estate, etc.) has risen. However, this transition happened at very different rates in the two countries. This can be seen most clearly by comparing the employment by sector in both countries in _____

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

A) 1900 with the employment by sector in 1950.

B) 1800 with the employment by sector in 2012.

C) 1900 with the employment by sector in 2012.

D) 1800 with the employment by sector in 1900.

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14

Euphorbia esula (leafy spurge) is a Eurasian plant that has become invasive in North America, where it displaces native vegetation and sickens cattle. *E. esula* can be controlled with chemical herbicides, but that approach can also kill harmless plants nearby. Recent research on introducing engineered DNA into plant species to inhibit their reproduction may offer a path toward exclusively targeting *E. esula*, consequently _____

Which choice most logically completes the text?

A) making individual *E. esula* plants more susceptible to existing chemical herbicides.

B) enhancing the ecological benefits of *E. esula* in North America.

C) enabling cattle to consume *E. esula* without becoming sick.

D) reducing invasive *E. esula* numbers without harming other organisms.

15

Both Sona Charaipotra, an Indian American, and Dhonielle Clayton, an African American, grew up frustrated by the lack of diverse characters in books for young people. In 2011, these two writers joined forces to found CAKE Literary, a book packaging _____ specializes in the creation and promotion of stories told from diverse perspectives for children and young adults.

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

A) company,

B) company that

C) company

D) company, that

16

In 1930, Japanese American artist Chiura Obata depicted the natural beauty of Yosemite National Park in two memorable woodcuts: *Evening at Carl Inn* and *Lake Basin in the High Sierra*. In 2019, _____ exhibited alongside 150 of Obata's other works in a single-artist show at the Smithsonian American Art Museum.

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

A) it was

B) they were

C) this was

D) some were

17

American writer Edwidge Danticat, who emigrated from Haiti in 1981, has won acclaim for her powerful short stories, novels, and _____ her lyrical yet unflinching depictions of her native country's turbulent history, writer Robert Antoni has compared Danticat to Nobel Prize–winning novelist Toni Morrison.

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

A) essays, praising

B) essays and praising

C) essays praising

D) essays. Praising

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CONTINUE

18

In 1966, Emmett Ashford became the first African American to umpire a Major League Baseball game. His energetic gestures announcing when a player had struck out and his habit of barreling after a hit ball to see if it would land out of _____ transform the traditionally solemn umpire role into a dynamic one.

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

A) bounds helped
B) bounds, helping
C) bounds that helped
D) bounds to help

19

In crafting her fantasy fiction, Nigerian-born British author Helen Oyeyemi has drawn inspiration from the classic nineteenth-century fairy tales of the Brothers Grimm. Her 2014 novel *Boy, Snow, Bird*, for instance, is a complex retelling of the story of Snow White, while her 2019 novel _____ offers a delicious twist on the classic tale of Hansel and Gretel.

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

A) *Gingerbread*—
B) *Gingerbread*,
C) *Gingerbread*
D) *Gingerbread:*

20

The violins handmade in the seventeenth century by Italian craftsman Antonio Stradivari have been celebrated as some of the finest in the world. In close collaboration with musicians, Stradivari introduced changes to the shape of a traditional violin, flattening some of the instrument's curves and making _____ lighter overall.

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

A) those
B) one
C) them
D) it

21

During the English neoclassical period (1660–1789), many writers imitated the epic poetry and satires of ancient Greece and Rome. They were not the first in England to adopt the literary modes of classical _____ some of the most prominent figures of the earlier Renaissance period were also influenced by ancient Greek and Roman literature.

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

A) antiquity, however
B) antiquity, however,
C) antiquity, however;
D) antiquity; however,

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CONTINUE

22

One poll taken after the first 1960 presidential debate suggested that John Kennedy lost badly: only 21 percent of those who listened on the radio rated him the winner. _____ the debate was ultimately considered a victory for the telegenic young senator, who rated higher than his opponent, Vice President Richard Nixon, among those watching on the new medium of television.

Which choice completes the text with the most logical transition?

A) In other words,

B) Therefore,

C) Likewise,

D) Nevertheless,

23

In November 1934, Amrita Sher-Gil was living in what must have seemed like the ideal city for a young artist: Paris. She was studying firsthand the color-saturated style of France's modernist masters and beginning to make a name for herself as a painter. _____ Sher-Gil longed to return to her childhood home of India; only there, she believed, could her art truly flourish.

Which choice completes the text with the most logical transition?

A) Still,

B) Therefore,

C) Indeed,

D) Furthermore,

24

In his 1925 book *The Morphology of Landscape*, US geographer Carl Sauer challenged prevailing views about how natural landscapes influence human cultures. _____ Sauer argued that instead of being shaped entirely by their natural surroundings, cultures play an active role in their own development by virtue of their interactions with the environment.

Which choice completes the text with the most logical transition?

A) Similarly,

B) Finally,

C) Therefore,

D) Specifically,

25

Although those who migrated to California in 1849 dreamed of finding gold nuggets in streambeds, the state's richest deposits were buried deeply in rock, beyond the reach of individual prospectors. _____ by 1852, many had given up their fortune-hunting dreams and gone to work for one of the large companies capable of managing California's complex mining operations.

Which choice completes the text with the most logical transition?

A) Furthermore,

B) Still,

C) Consequently,

D) Next,

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26

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

- In 2013, archaeologists studied cat bone fragments they had found in the ruins of Quanhucun, a Chinese farming village.
- The fragments were estimated to be 5,300 years old.
- A chemical analysis of the fragments revealed that the cats had consumed large amounts of grain.
- The grain consumption is evidence that the Quanhucun cats may have been domesticated.

The student wants to present the Quanhucun study and its conclusions. Which choice most effectively uses relevant information from the notes to accomplish this goal?

A) As part of a 2013 study of cat domestication, a chemical analysis was conducted on cat bone fragments found in Quanhucun, China.

B) A 2013 analysis of cat bone fragments found in Quanhucun, China, suggests that cats there may have been domesticated 5,300 years ago.

C) In 2013, archaeologists studied what cats in Quanhucun, China, had eaten more than 5,000 years ago.

D) Cat bone fragments estimated to be 5,300 years old were found in Quanhucun, China, in 2013.

27

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

- Started in 1925, the Scripps National Spelling Bee is a US-based spelling competition.
- The words used in the competition have diverse linguistic origins.
- In 2008, Sameer Mishra won by correctly spelling the word "guerdon."
- "Guerdon" derives from the Anglo-French word "guerdun."
- In 2009, Kavya Shivashankar won by correctly spelling the word "Laodicean."
- "Laodicean" derives from the ancient Greek word "Laodíkeia."

The student wants to emphasize a difference in the origins of the two words. Which choice most effectively uses relevant information from the notes to accomplish this goal?

A) "Guerdon," the final word of the 2008 Scripps National Spelling Bee, is of Anglo-French origin, while the following year's final word, "Laodicean," derives from ancient Greek.

B) In 2008, Sameer Mishra won the Scripps National Spelling Bee by correctly spelling the word "guerdon"; however, the following year, Kavya Shivashankar won based on spelling the word "Laodicean."

C) Kavya Shivashankar won the 2009 Scripps National Spelling Bee by correctly spelling "Laodicean," which derives from the ancient Greek word "Laodíkeia."

D) The Scripps National Spelling Bee uses words from diverse linguistic origins, such as "guerdon" and "Laodicean."

STOP

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

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STOP: Check your scores for R+W Module 1 using the key provided at the end of this PDF. DO NOT include the gray-highlighted unscored questions in your tally for total score.

If your total score > 17, move on to upper level module 2 immediately

If your total score is =< 17, move on to lower level module 2 immediately

READING & WRITING
MODULE 2

LEVEL OF DIFFICULTY
LOWER

Time: 32 minutes

Reading and Writing

27 QUESTIONS

DIRECTIONS

The questions in this section address a number of important reading and writing skills. Each question includes one or more passages, which may include a table or graph. Read each passage and question carefully, and then choose the best answer to the question based on the passage(s).

All questions in this section are multiple-choice with four answer choices. Each question has a single best answer.

1

Due to their often strange images, highly experimental syntax, and opaque subject matter, many of John Ashbery's poems can be quite difficult to _____ and thus are the object of heated debate among scholars.

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

A) delegate
B) compose
C) interpret
D) renounce

2

Mônica Lopes-Ferreira and others at Brazil's Butantan Institute are studying the freshwater stingray species *Potamotrygon rex* to determine whether biological characteristics such as the rays' age and sex have _____ effect on the toxicity of their venom—that is, to see if differences in these traits are associated with considerable variations in venom potency.

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

A) a disconcerting
B) an acceptable
C) an imperceptible
D) a substantial

3

Former astronaut Ellen Ochoa says that although she doesn't have a definite idea of when it might happen, she _____ that humans will someday need to be able to live in other environments than those found on Earth. This conjecture informs her interest in future research missions to the moon.

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

A) demands
B) speculates
C) doubts
D) establishes

4

Following the principles of community-based participatory research, tribal nations and research institutions are equal partners in health studies conducted on reservations. A collaboration between the Crow Tribe and Montana State University _____ this model: tribal citizens worked alongside scientists to design the methodology and continue to assist in data collection.

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

A) circumvents
B) eclipses
C) fabricates
D) exemplifies

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CONTINUE

5

Researchers have struggled to pinpoint specific causes for hiccups, which happen when a person's diaphragm contracts _____. However, neuroscientist Kimberley Whitehead has found that these uncontrollable contractions may play an important role in helping infants regulate their breathing.

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

A) involuntarily
B) beneficially
C) strenuously
D) smoothly

6

The parasitic dodder plant increases its reproductive success by flowering at the same time as the host plant it has latched onto. In 2020, Jianqiang Wu and his colleagues determined that the tiny dodder achieves this _____ with its host by absorbing and utilizing a protein the host produces when it is about to flower.

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

A) synchronization
B) hibernation
C) prediction
D) moderation

7

Ofelia Zepeda's contributions to the field of linguistics are _____: her many accomplishments include working as a linguistics professor and bilingual poet, authoring the first Tohono O'odham grammar book, and co-founding the American Indian Language Development Institute.

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

A) pragmatic
B) controversial
C) extensive
D) universal

8

In the Indigenous intercropping system known as the Three Sisters, maize, squash, and beans form an _____ web of relations: maize provides the structure on which the bean vines grow; the squash vines cover the soil, discouraging competition from weeds; and the beans aid their two "sisters" by enriching the soil with essential nitrogen.

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

A) indecipherable
B) ornamental
C) obscure
D) intricate

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CONTINUE

9

The following text is adapted from Oscar Wilde's 1891 novel *The Picture of Dorian Gray*. Dorian Gray is taking his first look at a portrait that Hallward has painted of him.

> Dorian passed listlessly in front of his picture and turned towards it. When he saw it he drew back, and his cheeks flushed for a moment with pleasure. A look of joy came into his eyes, as if he had recognized himself for the first time. He stood there motionless and in wonder, dimly conscious that Hallward was speaking to him, but not catching the meaning of his words. The sense of his own beauty came on him like a revelation. He had never felt it before.

According to the text, what is true about Dorian?

A) He wants to know Hallward's opinion of the portrait.

B) He is delighted by what he sees in the portrait.

C) He prefers portraits to other types of paintings.

D) He is uncertain of Hallward's talent as an artist.

10

"Often Rebuked, Yet Always Back Returning" is an 1846 poem by Emily Brontë. The poem conveys the speaker's determination to experience the countryside around her: _____

Which quotation from the poem most effectively illustrates the claim?

A) "Often rebuked, yet always back returning / To those first feelings that were born with me, / And leaving busy chase of wealth and learning / For idle dreams of things which cannot be."

B) "I'll walk, but not in old heroic traces, / And not in paths of high morality, / And not among the half-distinguished faces, / The clouded forms of long-past history."

C) "I'll walk where my own nature would be leading: / It vexes me to choose another guide: / Where the grey flocks in ferny glens are feeding; / Where the wild wind blows on the mountain side."

D) "To-day, I will seek not the shadowy region; / Its unsustaining vastness waxes drear; / And visions rising, legion after legion, / Bring the unreal world too strangely near."

11

"Mrs. Spring Fragrance" is a 1912 short story by Sui Sin Far. In the story, Mrs. Spring Fragrance, a Chinese immigrant living in Seattle, is traveling in California. In letters to her husband and friend, she demonstrates her concern for what's happening at her home in Seattle while she is away: _____

Which quotation from Mrs. Spring Fragrance's letters most effectively illustrates the claim?

A) "My honorable cousin is preparing for the Fifth Moon Festival, and wishes me to compound for the occasion some American 'fudge,' for which delectable sweet, made by my clumsy hands, you have sometimes shown a slight prejudice."

B) "Next week I accompany Ah Oi to the beauteous town of San José. There will we be met by the son of the Illustrious Teacher."

C) "Forget not to care for the cat, the birds, and the flowers. Do not eat too quickly nor fan too vigorously now that the weather is warming."

D) "I am enjoying a most agreeable visit, and American friends, as also our own, strive benevolently for the accomplishment of my pleasure."

12

Hedda Gabler is an 1890 play by Henrik Ibsen. As a woman in the Victorian era, Hedda, the play's central character, is unable to freely determine her own future. Instead, she seeks to influence another person's fate, as is evident when she says to another character, _____

Which quotation from a translation of *Hedda Gabler* most effectively illustrates the claim?

A) "Then what in heaven's name would you have me do with myself?"

B) "I want for once in my life to have power to mould a human destiny."

C) "Then I, poor creature, have no sort of power over you?"

D) "Faithful to your principles, now and for ever! Ah, that is how a man should be!"

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CONTINUE

13

If some artifacts recovered from excavations of the settlement of Kuulo Kataa, in modern Ghana, date from the thirteenth century CE, that may lend credence to claims that the settlement was founded before or around that time. There is other evidence, however, strongly supporting a fourteenth century CE founding date for Kuulo Kataa. If both the artifact dates and the fourteenth century CE founding date are correct, that would imply that _____

Which choice most logically completes the text?

A) artifacts from the fourteenth century CE are more commonly recovered than are artifacts from the thirteenth century CE.

B) the artifacts originated elsewhere and eventually reached Kuulo Kataa through trade or migration.

C) Kuulo Kataa was founded by people from a different region than had previously been assumed.

D) excavations at Kuulo Kataa may have inadvertently damaged some artifacts dating to the fourteenth century CE.

14

One theory behind human bipedalism speculates that it originated in a mostly ground-based ancestor that practiced four-legged "knuckle-walking," like chimpanzees and gorillas do today, and eventually evolved into moving upright on two legs. But recently, researchers observed orangutans, another relative of humans, standing on two legs on tree branches and using their arms for balance while they reached for fruits. These observations may suggest that _____

Which choice most logically completes the text?

A) bipedalism evolved because it was advantageous to a tree-dwelling ancestor of humans.

B) bipedalism must have evolved simultaneously with knuckle-walking and tree-climbing.

C) moving between the ground and the trees would have been difficult without bipedalism.

D) a knuckle-walking human ancestor could have easily moved bipedally in trees.

15

In a study of the cognitive abilities of white-faced capuchin monkeys (*Cebus imitator*), researchers neglected to control for the physical difficulty of the tasks they used to evaluate the monkeys. The cognitive abilities of monkeys given problems requiring little dexterity, such as sliding a panel to retrieve food, were judged by the same criteria as were those of monkeys given physically demanding problems, such as unscrewing a bottle and inserting a straw. The results of the study, therefore, _____

Which choice most logically completes the text?

A) could suggest that there are differences in cognitive ability among the monkeys even though such differences may not actually exist.

B) are useful for identifying tasks that the monkeys lack the cognitive capacity to perform but not for identifying tasks that the monkeys can perform.

C) should not be taken as indicative of the cognitive abilities of any monkey species other than *C. imitator*.

D) reveal more about the monkeys' cognitive abilities when solving artificial problems than when solving problems encountered in the wild.

16

The increased integration of digital technologies throughout the process of book creation in the late 20th and early 21st centuries lowered the costs of book production, but those decreased costs have been most significant in the manufacturing and distribution process, which occurs after the authoring, editing, and design of the book are complete. This suggests that in the late 20th and early 21st centuries, _____

Which choice most logically completes the text?

A) digital technologies made it easier than it had been previously for authors to write very long works and get them published.

B) customers generally expected the cost of books to decline relative to the cost of other consumer goods.

C) publishers increased the variety of their offerings by printing more unique titles but also printed fewer copies of each title.

D) the costs of writing, editing, and designing a book were less affected by the technologies used than were the costs of manufacturing and distributing a book.

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CONTINUE

17

Public-awareness campaigns about the need to reduce single-use plastics can be successful, says researcher Kim Borg of Monash University in Australia, when these campaigns give consumers a choice: for example, Japan achieved a 40 percent reduction in plastic-bag use after cashiers were instructed to ask customers whether _____ wanted a bag.

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

A) they
B) one
C) you
D) it

18

A member of the Cherokee Nation, Mary Golda Ross is renowned for her contributions to NASA's Planetary Flight Handbook, which _____ detailed mathematical guidance for missions to Mars and Venus.

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

A) provided
B) having provided
C) to provide
D) providing

19

Typically, underlines, scribbles, and notes left in the margins by a former owner lower a book's _____ when the former owner is a famous poet like Walt Whitman, such markings, known as marginalia, can be a gold mine to literary scholars.

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

A) value, but
B) value
C) value,
D) value but

20

British scientists James Watson and Francis Crick won the Nobel Prize in part for their 1953 paper announcing the double helix structure of DNA, but it is misleading to say that Watson and Crick discovered the double helix. _____ findings were based on a famous X-ray image of DNA fibers, "Photo 51," developed by X-ray crystallographer Rosalind Franklin and her graduate student Raymond Gosling.

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

A) They're
B) It's
C) Their
D) Its

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CONTINUE

21

In order to prevent nonnative fish species from moving freely between the Mediterranean and Red Seas, marine biologist Bella Galil has proposed that a saline lock system be installed along the Suez Canal in Egypt's Great Bitter Lakes. The lock would increase the salinity of the lakes and _____ a natural barrier of water most marine creatures would be unable to cross.

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

A) creates
B) create
C) creating
D) created

22

Lucía Michel of the University of Chile observed that alkaline soils contain an insoluble form of iron that blueberry plants cannot absorb, thus inhibiting blueberry growth. If these plants were grown in alkaline soil alongside grasses that aid in iron solubilization, _____ Michel was determined to find out.

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

A) could the blueberries thrive.
B) the blueberries could thrive.
C) the blueberries could thrive?
D) could the blueberries thrive?

23

The classic children's board game Chutes and Ladders is a version of an ancient Nepalese game, Paramapada Sopanapata. In both games, players encounter "good" or "bad" spaces while traveling along a path; landing on one of the good spaces _____ a player to skip ahead and arrive closer to the end goal.

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

A) allows
B) are allowing
C) have allowed
D) allow

24

In 1968, US Congressman John Conyers introduced a bill to establish a national holiday in honor of Dr. Martin Luther King Jr. The bill didn't make it to a vote, but Conyers was determined. He teamed up with Shirley Chisholm, the first Black woman to be elected to Congress, and they resubmitted the bill every session for the next fifteen years. _____ in 1983, the bill passed.

Which choice completes the text with the most logical transition?

A) Instead,
B) Likewise,
C) Finally,
D) Additionally,

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CONTINUE

25

Most conifers (trees belonging to the phylum Coniferophyta) are evergreen. That is, they keep their green leaves or needles year-round. However, not all conifer species are evergreen. Larch trees, _____ lose their needles every fall.

Which choice completes the text with the most logical transition?

A) for instance,

B) nevertheless,

C) meanwhile,

D) in addition,

26

Samuel Coleridge-Taylor was a prominent classical music composer from England who toured the US three times in the early 1900s. The child of a West African father and an English mother, Coleridge-Taylor emphasized his mixed-race ancestry. For example, he referred to himself as Anglo-African. _____ he incorporated the sounds of traditional African music into his classical music compositions.

Which choice completes the text with the most logical transition?

A) In addition,

B) Actually,

C) However,

D) Regardless,

27

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

- British musicians John Lennon and Paul McCartney shared writing credit for numerous Beatles songs.
- Many Lennon-McCartney songs were actually written by either Lennon or McCartney, not by both.
- The exact authorship of specific parts of many Beatles songs, such as the verse for "In My Life," is disputed.
- Mark Glickman, Jason Brown, and Ryan Song used statistical methods to analyze the musical content of Beatles songs.
- They concluded that there is 18.9% probability that McCartney wrote the verse for "In My Life," stating that the verse is "consistent with Lennon's songwriting style."

The student wants to make a generalization about the kind of study conducted by Glickman, Brown, and Song. Which choice most effectively uses relevant information from the notes to accomplish this goal?

A) Based on statistical analysis, Glickman, Brown, and Song claim that John Lennon wrote the verse of "In My Life."

B) There is only an 18.9% probability that Paul McCartney wrote the verse for "In My Life"; John Lennon is the more likely author.

C) It is likely that John Lennon, not Paul McCartney, wrote the verse for "In My Life."

D) Researchers have used statistical methods to address questions of authorship within the field of music.

STOP

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

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READING & WRITING
MODULE 2

LEVEL OF DIFFICULTY
UPPER

Time: 32 minutes

Reading and Writing

27 QUESTIONS

DIRECTIONS

The questions in this section address a number of important reading and writing skills. Each question includes one or more passages, which may include a table or graph. Read each passage and question carefully, and then choose the best answer to the question based on the passage(s).

All questions in this section are multiple-choice with four answer choices. Each question has a single best answer.

1

In addition to being an accomplished psychologist himself, Francis Cecil Sumner was a _____ increasing the opportunity for Black students to study psychology, helping to found the psychology department at Howard University, a historically Black university, in 1930.

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

A) proponent of
B) supplement to
C) beneficiary of
D) distraction for

2

For her 2021 art installation *Anthem*, Wu Tsang joined forces with singer and composer Beverly Glenn-Copeland to produce a piece that critics found truly _____: they praised Tsang for creatively transforming a museum rotunda into a dynamic exhibit by projecting filmed images of Glenn-Copeland onto a massive 84-foot curtain and filling the space with the sounds of his and other voices singing.

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

A) restrained
B) inventive
C) inexplicable
D) mystifying

3

Scholarly discussions of gender in Shakespeare's comedies often celebrate the rebellion of the playwright's characters against the rigid expectations _____ by Elizabethan society. Most of the comedies end in marriage, with characters returning to their socially dictated gender roles after previously defying them, but there are some notable exceptions.

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

A) interjected
B) committed
C) illustrated
D) prescribed

4

The work of Kiowa painter T.C. Cannon derives its power in part from the tension among his _____ influences: classic European portraiture, with its realistic treatment of faces; the American pop art movement, with its vivid colors; and flatstyle, the intertribal painting style that rejects the effect of depth typically achieved through shading and perspective.

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

A) complementary
B) unknown
C) disparate
D) interchangeable

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CONTINUE

5

Text 1

Conventional wisdom long held that human social systems evolved in stages, beginning with hunter-gatherers forming small bands of members with roughly equal status. The shift to agriculture about 12,000 years ago sparked population growth that led to the emergence of groups with hierarchical structures: associations of clans first, then chiefdoms, and finally, bureaucratic states.

Text 2

In a 2021 book, anthropologist David Graeber and archaeologist David Wengrow maintain that humans have always been socially flexible, alternately forming systems based on hierarchy and collective ones with decentralized leadership. The authors point to evidence that as far back as 50,000 years ago some hunter-gatherers adjusted their social structures seasonally, at times dispersing in small groups but also assembling into communities that included esteemed individuals.

Based on the texts, how would Graeber and Wengrow (Text 2) most likely respond to the "conventional wisdom" presented in Text 1?

A) By conceding the importance of hierarchical systems but asserting the greater significance of decentralized collective societies

B) By disputing the idea that developments in social structures have followed a linear progression through distinct stages

C) By acknowledging that hierarchical roles likely weren't a part of social systems before the rise of agriculture

D) By challenging the assumption that groupings of hunter-gatherers were among the earliest forms of social structure

6

In 1934 physicist Eugene Wigner posited the existence of a crystal consisting entirely of electrons in a honeycomb-like structure. The so-called Wigner crystal remained largely conjecture, however, until Feng Wang and colleagues announced in 2021 that they had captured an image of one. The researchers trapped electrons between two semiconductors and then cooled the apparatus, causing the electrons to settle into a crystalline structure. By inserting an ultrathin sheet of graphene above the crystal, the researchers obtained an impression—the first visual confirmation of the Wigner crystal.

Which choice best states the main idea of the text?

A) Researchers have obtained the most definitive evidence to date of the existence of the Wigner crystal.

B) Researchers have identified an innovative new method for working with unusual crystalline structures.

C) Graphene is the most important of the components required to capture an image of a Wigner crystal.

D) It's difficult to acquire an image of a Wigner crystal because of the crystal's honeycomb structure.

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CONTINUE

7

For many years, the only existing fossil evidence of mixopterid eurypterids—an extinct family of large aquatic arthropods known as sea scorpions and related to modern arachnids and horseshoe crabs—came from four species living on the paleocontinent of Laurussia. In a discovery that expands our understanding of the geographical distribution of mixopterids, paleontologist Bo Wang and others have identified fossilized remains of a new mixopterid species, *Terropterus xiushanensis*, that lived over 400 million years ago on the paleocontinent of Gondwana.

According to the text, why was Wang and his team's discovery of the *Terropterus xiushanensis* fossil significant?

A) The fossil constitutes the first evidence found by scientists that mixopterids lived more than 400 million years ago.

B) The fossil helps establish that mixopterids are more closely related to modern arachnids and horseshoe crabs than previously thought.

C) The fossil helps establish a more accurate timeline of the evolution of mixopterids on the paleocontinents of Laurussia and Gondwana.

D) The fossil constitutes the first evidence found by scientists that mixopterids existed outside the paleocontinent of Laurussia.

8

The following text is adapted from Edith Nesbit's 1906 novel *The Railway Children*.

> Mother did not spend all her time in paying dull [visits] to dull ladies, and sitting dully at home waiting for dull ladies to pay [visits] to her. She was almost always there, ready to play with the children, and read to them, and help them to do their home-lessons. Besides this she used to write stories for them while they were at school, and read them aloud after tea, and she always made up funny pieces of poetry for their birthdays and for other great occasions.

According to the text, what is true about Mother?

A) She wishes that more ladies would visit her.

B) Birthdays are her favorite special occasion.

C) She creates stories and poems for her children.

D) Reading to her children is her favorite activity.

9

"The Young Girl" is a 1920 short story by Katherine Mansfield. In the story, the narrator takes an unnamed seventeen-year-old girl and her younger brother out for a meal. In describing the teenager, Mansfield frequently contrasts the character's pleasant appearance with her unpleasant attitude, as when Mansfield writes of the teenager, _____

Which quotation from "The Young Girl" most effectively illustrates the claim?

A) "I heard her murmur, 'I can't bear flowers on a table.' They had evidently been giving her intense pain, for she positively closed her eyes as I moved them away."

B) "While we waited she took out a little, gold powder-box with a mirror in the lid, shook the poor little puff as though she loathed it, and dabbed her lovely nose."

C) "I saw, after that, she couldn't stand this place a moment longer, and, indeed, she jumped up and turned away while I went through the vulgar act of paying for the tea."

D) "She didn't even take her gloves off. She lowered her eyes and drummed on the table. When a faint violin sounded she winced and bit her lip again. Silence."

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CONTINUE

10

Estimates of Tyrannosaurid Bite Force

Study	Year	Estimation method	Approximate bite force (newtons)
Cost et al.	2019	muscular and skeletal modeling	35,000–63,000
Gignac and Erickson	2017	tooth-bone interaction analysis	8,000–34,000
Meers	2002	body-mass scaling	183,000–235,000
Bates and Falkingham	2012	muscular and skeletal modeling	35,000–57,000

The largest tyrannosaurids—the family of carnivorous dinosaurs that includes *Tarbosaurus*, *Albertosaurus*, and, most famously, *Tyrannosaurus rex*—are thought to have had the strongest bites of any land animals in Earth's history. Determining the bite force of extinct animals can be difficult, however, and paleontologists Paul Barrett and Emily Rayfield have suggested that an estimate of dinosaur bite force may be significantly influenced by the methodology used in generating that estimate.

Which choice best describes data from the table that support Barrett and Rayfield's suggestion?

A) The study by Meers used body-mass scaling and produced the lowest estimated maximum bite force, while the study by Cost et al. used muscular and skeletal modeling and produced the highest estimated maximum.

B) In their study, Gignac and Erickson used tooth-bone interaction analysis to produce an estimated bite force range with a minimum of 8,000 newtons and a maximum of 34,000 newtons.

C) The bite force estimates produced by Bates and Falkingham and by Cost et al. were similar to each other, while the estimates produced by Meers and by Gignac and Erickson each differed substantially from any other estimate.

D) The estimated maximum bite force produced by Cost et al. exceeded the estimated maximum produced by Bates and Falkingham, even though both groups of researchers used the same method to generate their estimates.

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11

When digging for clams, their primary food, sea otters damage the roots of eelgrass plants growing on the seafloor. Near Vancouver Island in Canada, the otter population is large and well established, yet the eelgrass meadows are healthier than those found elsewhere off Canada's coast. To explain this, conservation scientist Erin Foster and colleagues compared the Vancouver Island meadows to meadows where otters are absent or were reintroduced only recently. Finding that the Vancouver Island meadows have a more diverse gene pool than the others do, Foster hypothesized that damage to eelgrass roots increases the plant's rate of sexual reproduction; this, in turn, boosts genetic diversity, which benefits the meadow's health overall.

Which finding, if true, would most directly undermine Foster's hypothesis?

A) At some sites in the study, eelgrass meadows are found near otter populations that are small and have only recently been reintroduced.

B) At several sites not included in the study, there are large, well-established sea otter populations but no eelgrass meadows.

C) At several sites not included in the study, eelgrass meadows' health correlates negatively with the length of residence and size of otter populations.

D) At some sites in the study, the health of plants unrelated to eelgrass correlates negatively with the length of residence and size of otter populations.

12

In the mountains of Brazil, *Barbacenia tomentosa* and *Barbacenia macrantha*—two plants in the Velloziaceae family—establish themselves on soilless, nutrient-poor patches of quartzite rock. Plant ecologists Anna Abrahão and Patricia de Britto Costa used microscopic analysis to determine that the roots of *B. tomentosa* and *B. macrantha*, which grow directly into the quartzite, have clusters of fine hairs near the root tip; further analysis indicated that these hairs secrete both malic and citric acids. The researchers hypothesize that the plants depend on dissolving underlying rock with these acids, as the process not only creates channels for continued growth but also releases phosphates that provide the vital nutrient phosphorus.

Which finding, if true, would most directly support the researchers' hypothesis?

A) Other species in the Velloziaceae family are found in terrains with more soil but have root structures similar to those of *B. tomentosa* and *B. macrantha*.

B) Though *B. tomentosa* and *B. macrantha* both secrete citric and malic acids, each species produces the acids in different proportions.

C) The roots of *B. tomentosa* and *B. macrantha* carve new entry points into rocks even when cracks in the surface are readily available.

D) *B. tomentosa* and *B. macrantha* thrive even when transferred to the surfaces of rocks that do not contain phosphates.

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13

Ancestral Puebloans, the civilization from which present-day Pueblo tribes descended, emerged as early as 1500 B.C.E. in an area of what is now the southwestern United States and dispersed suddenly in the late 1200s C.E., abandoning established villages with systems for farming crops and turkeys. Recent analysis comparing turkey remains at Mesa Verde, one such village in southern Colorado, to samples from modern turkey populations in the Rio Grande Valley of north central New Mexico determined that the latter birds descended in part from turkeys cultivated at Mesa Verde, with shared genetic markers appearing only after 1280. Thus, researchers concluded that _____

Which choice most logically completes the text?

A) conditions of the terrains in the Rio Grande Valley and Mesa Verde had greater similarities in the past than they do today.

B) some Ancestral Puebloans migrated to the Rio Grande Valley in the late 1200s and carried farming practices with them.

C) Indigenous peoples living in the Rio Grande Valley primarily planted crops and did not cultivate turkeys before 1280.

D) the Ancestral Puebloans of Mesa Verde likely adopted the farming practices of Indigenous peoples living in other regions.

14

Ratified by more than 90 countries, the Nagoya Protocol is an international agreement ensuring that Indigenous communities are compensated when their agricultural resources and knowledge of wild plants and animals are utilized by agricultural corporations. However, the protocol has shortcomings. For example, it allows corporations to insist that their agreements with communities to conduct research on the commercial uses of the communities' resources and knowledge remain confidential. Therefore, some Indigenous advocates express concern that the protocol may have the unintended effect of _____

Which choice most logically completes the text?

A) diminishing the monetary reward that corporations might derive from their agreements with Indigenous communities.

B) limiting the research that corporations conduct on the resources of the Indigenous communities with which they have signed agreements.

C) preventing independent observers from determining whether the agreements guarantee equitable compensation for Indigenous communities.

D) discouraging Indigenous communities from learning new methods for harvesting plants and animals from their corporate partners.

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15

The domestic sweet potato (*Ipomoea batatas*) descends from a wild plant native to South America. It also populates the Polynesian Islands, where evidence confirms that Native Hawaiians and other Indigenous peoples were cultivating the plant centuries before seafaring first occurred over the thousands of miles of ocean separating them from South America. To explain how the sweet potato was first introduced in Polynesia, botanist Pablo Muñoz-Rodríguez and colleagues analyzed the DNA of numerous varieties of the plant, concluding that Polynesian varieties diverged from South American ones over 100,000 years ago. Given that Polynesia was peopled only in the last three thousand years, the team concluded that _____

Which choice most logically completes the text?

A) the cultivation of the sweet potato in Polynesia likely predates its cultivation in South America.

B) Polynesian peoples likely acquired the sweet potato from South American peoples only within the last three thousand years.

C) human activity likely played no role in the introduction of the sweet potato in Polynesia.

D) Polynesian sweet potato varieties likely descend from a single South American variety that was domesticated, not wild.

16

In Death Valley National Park's Racetrack Playa, a flat, dry lakebed, are 162 rocks—some weighing less than a pound but others almost 700 pounds—that move periodically from place to place, seemingly of their own volition. Racetrack-like trails in the _____ mysterious migration.

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

A) playas sediment mark the rock's

B) playa's sediment mark the rocks

C) playa's sediment mark the rocks'

D) playas' sediment mark the rocks'

17

Nigerian author Buchi Emecheta's celebrated literary oeuvre includes *The Joys of Motherhood*, a novel about the changing roles of women in 1950s _____ a television play about the private struggles of a newlywed couple in Nigeria; and *Head Above Water*, her autobiography.

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

A) Lagos, *A Kind of Marriage*,

B) Lagos; *A Kind of Marriage*,

C) Lagos, *A Kind of Marriage*:

D) Lagos; *A Kind of Marriage*

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18

In 2016, engineer Vanessa Galvez oversaw the installation of 164 bioswales, vegetated channels designed to absorb and divert stormwater, along the streets of Queens, New York. By reducing the runoff flowing into city sewers, _____

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

A) the mitigation of both street flooding and the resulting pollution of nearby waterways has been achieved by bioswales.

B) the bioswales have mitigated both street flooding and the resulting pollution of nearby waterways.

C) the bioswales' mitigation of both street flooding and the resulting pollution of nearby waterways has been achieved.

D) both street flooding and the resulting pollution of nearby waterways have been mitigated by bioswales.

19

From afar, African American fiber artist Bisa Butler's portraits look like paintings, their depictions of human faces, bodies, and clothing so intricate that it seems only a fine brush could have rendered them. When viewed up close, however, the portraits reveal themselves to be _____ stitching barely visible among the thousands of pieces of printed, microcut fabric.

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

A) quilts, and the

B) quilts, the

C) quilts; the

D) quilts. The

20

Compared to that of alumina glass, _____ silica glass atoms are so far apart that they are unable to re-form bonds after being separated.

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

A) silica glass is at a significant disadvantage due to its more dispersed atomic arrangement:

B) silica glass has a more dispersed atomic arrangement, resulting in a significant disadvantage:

C) a significant disadvantage of silica glass is that its atomic arrangement is more dispersed:

D) silica glass's atomic arrangement is more dispersed, resulting in a significant disadvantage:

21

In the historical novel *The Surrender Tree*, Cuban American author Margarita Engle uses poetry rather than prose _____ the true story of Cuban folk hero Rosa La Bayamesa.

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

A) tells

B) told

C) is telling

D) to tell

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22

Sociologist Alton Okinaka sits on the review board tasked with adding new sites to the Hawai'i Register of Historic Places, which includes Pi'ilanihale Heiau and the 'Ōpaeka'a Road Bridge. Okinaka doesn't make such decisions _____ all historical designations must be approved by a group of nine other experts from the fields of architecture, archaeology, history, and Hawaiian culture.

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

A) single-handedly, however;
B) single-handedly; however,
C) single-handedly, however,
D) single-handedly however

23

When Chinese director Chloé Zhao accepted the Oscar in 2021 for her film *Nomadland*, she made Academy Award history. _____ only one other woman, Kathryn Bigelow of the United States, had been named best director at the Oscars, making Zhao the second woman and the first Asian woman to win the award.

Which choice completes the text with the most logical transition?

A) As a result,
B) Previously,
C) However,
D) Likewise,

24

Researchers Helena Mihaljević-Brandt, Lucía Santamaría, and Marco Tullney report that while mathematicians may have traditionally worked alone, evidence points to a shift in the opposite direction. _____ mathematicians are choosing to collaborate with their peers—a trend illustrated by a rise in the number of mathematics publications credited to multiple authors.

Which choice completes the text with the most logical transition?

A) Similarly,
B) For this reason,
C) Furthermore,
D) Increasingly,

25

When soil becomes contaminated by toxic metals, it can be removed from the ground and disposed of in a landfill. _____ contaminated soil can be detoxified via phytoremediation: plants that can withstand high concentrations of metals absorb the pollutants and store them in their shoots, which are then cut off and safely disposed of, preserving the health of the plants.

Which choice completes the text with the most logical transition?

A) Alternatively,
B) Specifically,
C) For example,
D) As a result,

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26

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

- In the late 1890s, over 14,000 unique varieties of apples were grown in the US.
- The rise of industrial agriculture in the mid-1900s narrowed the range of commercially grown crops.
- Thousands of apple varieties considered less suitable for commercial growth were lost.
- Today, only 15 apple varieties dominate the market, making up 90% of apples purchased in the US.
- The Lost Apple Project, based in Washington State, attempts to find and grow lost apple varieties.

The student wants to emphasize the decline in unique apple varieties in the US and specify why this decline occurred. Which choice most effectively uses relevant information from the notes to accomplish these goals?

A) The Lost Apple Project is dedicated to finding some of the apple varieties lost following a shift in agricultural practices in the mid-1900s.

B) While over 14,000 apple varieties were grown in the US in the late 1890s, only 15 unique varieties make up most of the apples sold today.

C) Since the rise of industrial agriculture, US farmers have mainly grown the same few unique apple varieties, resulting in the loss of thousands of varieties less suitable for commercial growth.

D) As industrial agriculture rose to prominence in the mid-1900s, the number of crops selected for cultivation decreased dramatically.

27

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

- The *Atlantic Monthly* magazine was first published in 1857.
- The magazine focused on politics, art, and literature.
- In 2019, historian Cathryn Halverson published the book *Faraway Women and the "Atlantic Monthly."*
- Its subject is female authors whose autobiographies appeared in the magazine in the early 1900s.
- One of the authors discussed is Juanita Harrison.

The student wants to introduce Cathryn Halverson's book to an audience already familiar with the *Atlantic Monthly*. Which choice most effectively uses relevant information from the notes to accomplish this goal?

A) Cathryn Halverson's *Faraway Women and the "Atlantic Monthly"* discusses female authors whose autobiographies appeared in the magazine in the early 1900s.

B) A magazine called the *Atlantic Monthly*, referred to in Cathryn Halverson's book title, was first published in 1857.

C) *Faraway Women and the "Atlantic Monthly"* features contributors to the *Atlantic Monthly*, first published in 1857 as a magazine focusing on politics, art, and literature.

D) An author discussed by Cathryn Halverson is Juanita Harrison, whose autobiography appeared in the *Atlantic Monthly* in the early 1900s.

STOP

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

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Break: 10 minutes

MATH
MODULE 1

LEVEL OF DIFFICULTY
MIXED

Time: 35 minutes

Math

22 QUESTIONS

DIRECTIONS

The questions in this section address a number of important math skills.
Use of a calculator is permitted for all questions.

NOTES

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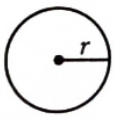
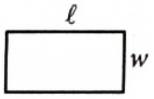
- Figures provided are drawn to scale.
- All figures lie in a plane.
- The domain of a given function f is the set of all real numbers x for which $f(x)$ is a real number.

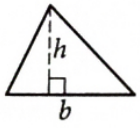
REFERENCE



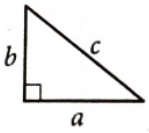
$A = \pi r^2$
$C = 2\pi r$



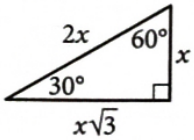
$A = \ell w$

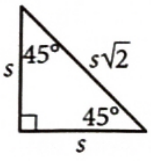


$A = \frac{1}{2}bh$

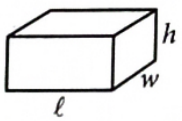


$c^2 = a^2 + b^2$

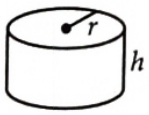




Special Right Triangles

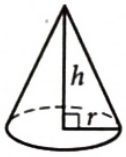


$V = \ell wh$

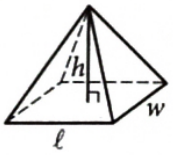


$V = \pi r^2 h$

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



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



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

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

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

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

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CONTINUE

For multiple-choice questions, solve each problem, choose the correct answer from the choices provided, and then circle your answer in this book. Circle only one answer for each question. If you change your mind, completely erase the circle. You will not get credit for questions with more than one answer circled, or for questions with no answers circled.

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1

4, 4, 4, 4, 8, 8, 8, 13, 13

Which frequency table correctly represents the data listed?

A)

Number	Frequency
4	4
8	3
13	2

B)

Number	Frequency
4	4
3	8
2	13

C)

Number	Frequency
4	16
8	24
13	26

D)

Number	Frequency
16	4
24	8
26	13

2

Which expression is equivalent to $x^2 + 3x - 40$?

A) $(x - 4)(x + 10)$

B) $(x - 5)(x + 8)$

C) $(x - 8)(x + 5)$

D) $(x - 10)(x + 4)$

3

Jay walks at a speed of 3 miles per hour and runs at a speed of 5 miles per hour. He walks for w hours and runs for r hours for a combined total of 14 miles. Which equation represents this situation?

A) $3w + 5r = 14$

B) $\frac{1}{3}w + \frac{1}{5}r = 14$

C) $\frac{1}{3}w + \frac{1}{5}r = 112$

D) $3w + 5r = 112$

4

In triangle ABC, the measure of angle B is 52° and the measure of angle C is 17°. What is the measure of angle A?

A) 21°

B) 35°

C) 69°

D) 111°

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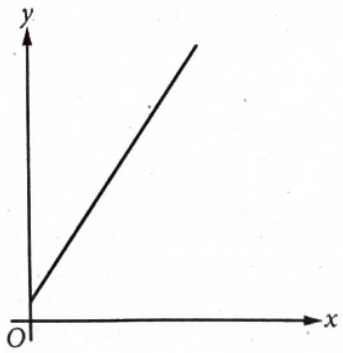
CONTINUE

5



The graph represents the total charge, in dollars, by an electrician for x hours of work. The electrician charges a onetime fee plus an hourly rate. What is the best interpretation of the slope of the graph?

A) The electrician's hourly rate

B) The electrician's onetime fee

C) The maximum amount that the electrician charges

D) The total amount that the electrician charges

6

The table summarizes the distribution of color and shape for 100 tiles of equal area.

	Red	Blue	Yellow	Total
Square	10	20	25	55
Pentagon	20	10	15	45
Total	30	30	40	100

If one of these tiles is selected at random, what is the probability of selecting a red tile? (Express your answer as a decimal or fraction, not as a percent.)

7

From a population of 50,000 people, 1,000 were chosen at random and surveyed about a proposed piece of legislation. Based on the survey, it is estimated that 35% of people in the population support the legislation, with an associated margin of error of 3%. Based on these results, which of the following is a plausible value for the total number of people in the population who support the proposed legislation?

A) 350

B) 650

C) 16,750

D) 31,750

8

$$\frac{55}{x+6} = x$$

What is the positive solution to the given equation?

9

An airplane descends from an altitude of 9,500 feet to 5,000 feet at a constant rate of 400 feet per minute. What type of function best models the relationship between the descending airplane's altitude and time?

A) Decreasing exponential

B) Decreasing linear

C) Increasing exponential

D) Increasing linear

10

$$g(x) = 11\left(\frac{1}{12}\right)^x$$

If the given function g is graphed in the xy-plane, where $y = g(x)$, what is the y-intercept of the graph?

A) (0, 11)

B) (0, 132)

C) (0, 1)

D) (0, 12)

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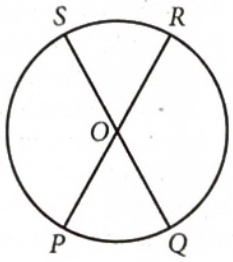
CONTINUE

11



Note: Figure not drawn to scale.

The circle shown has center O, circumference 144π, and diameters PR and QS. The length of arc PS is twice the length of arc PQ. What is the length of arc QR?

A) 24π

B) 48π

C) 72π

D) 96π

12

A rectangle has a length of x units and a width of $(x - 15)$ units. If the rectangle has an area of 76 square units, what is the value of x?

A) 4

B) 19

C) 23

D) 76

13

Time (years)	Total amount (dollars)
0	604.00
1	606.42
2	608.84

Rosa opened a savings account at a bank. The table shows the exponential relationship between the time t, in years, since Rosa opened the account and the total amount n, in dollars, in the account. If Rosa made no additional deposits or withdrawals, which of the following equations best represents the relationship between t and n?

A) $n = (1 + 604)^t$

B) $n = (1 + 0.004)^t$

C) $n = 604(1 + 0.004)^t$

D) $n = 0.004(1 + 604)^t$

14

At how many points do the graphs of the equations $y = x + 20$ and $y = 8x$ intersect in the xy-plane?

A) 0

B) 1

C) 2

D) 8

15

$$5G + 45R = 380$$

At a school fair, students can win colored tokens that are worth a different number of points depending on the color. One student won G green tokens and R red tokens worth a total of 380 points. The given equation represents this situation. How many more points is a red token worth than a green token?

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16

The number of bacteria in a liquid medium doubles every day. There are 44,000 bacteria in the liquid medium at the start of an observation. Which represents the number of bacteria, y, in the liquid medium t days after the start of the observation?

A) $y = \frac{1}{2}(44{,}000)^t$

B) $y = 2(44{,}000)^t$

C) $y = 44{,}000\left(\frac{1}{2}\right)^t$

D) $y = 44{,}000(2)^t$

17

A cylinder has a diameter of 8 inches and a height of 12 inches. What is the volume, in cubic inches, of the cylinder?

A) 16π

B) 96π

C) 192π

D) 768π

18

$$6x + 7y = 28$$
$$2x + 2y = 10$$

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

A) -2

B) 7

C) 14

D) 18

19

In triangle JKL, $\cos(K) = \frac{24}{51}$ and angle J is a right angle. What is the value of $\cos(L)$?

20

$$f(x) = 4x^2 - 50x + 126$$

The given equation defines the function f. For what value of x does $f(x)$ reach its minimum?

21

In the xy-plane, line ℓ passes through the point $(0, 0)$ and is parallel to the line represented by the equation $y = 8x + 2$. If line ℓ also passes through the point $(3, d)$, what is the value of d?

22

In the xy-plane, a line with equation $2y = c$ for some constant c intersects a parabola at exactly one point. If the parabola has equation $y = -2x^2 + 9x$, what is the value of c?

STOP

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STOP: Check your scores for Math Module 1 using the key provided at the end of this PDF. DO NOT include the gray-highlighted unscored questions in your tally for total score.

If your total score > 14, move on to upper level module 2 immediately.

If your total score =< 14, move on to lower level module 2 immediately.

MATH
MODULE 2

LEVEL OF DIFFICULTY
LOWER

Time: 35 minutes

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1

71, 72, 73, 76, 77, 79, 83, 87, 93

What is the median of the data shown?

A) 71
B) 77
C) 78
D) 79

2

$x + 40 = 95$

What value of x is the solution to the given equation?

3

What is the area of a rectangle with a length of 17 centimeters (cm) and a width of 7 cm?

A) 24 cm^2
B) 48 cm^2
C) 119 cm^2
D) 576 cm^2

4

Which expression is equivalent to $20w - (4w + 3w)$?

A) $10w$
B) $13w$
C) $19w$
D) $21w$

5

The number y is 84 less than the number x. Which equation represents the relationship between x and y?

A) $y = x + 84$
B) $y = \frac{1}{84}x$
C) $y = 84x$
D) $y = x - 84$

6

The expression $\frac{24}{6x + 42}$ is equivalent to $\frac{4}{x + b}$, where b is a constant and $x > 0$. What is the value of b?

A) 7
B) 10
C) 24
D) 252

7

Out of 300 seeds that were planted, 80% sprouted. How many of these seeds sprouted?

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CONTINUE

8

Ty set a goal to walk at least 24 kilometers every day to prepare for a multiday hike. On a certain day, Ty plans to walk at an average speed of 4 kilometers per hour. What is the minimum number of hours Ty must walk on that day to fulfill the daily goal?

A) 4
B) 6
C) 20
D) 24

9

If $6 + x = 9$, what is the value of $18 + 3x$?

10

The function f is defined by $f(x) = x^3 + 9$. What is the value of $f(2)$?

A) 14
B) 15
C) 17
D) 18

11

The total cost $f(x)$, in dollars, to lease a car for 36 months from a particular car dealership is given by $f(x) = 36x + 1{,}000$, where x is the monthly payment, in dollars. What is the total cost to lease a car when the monthly payment is $400?

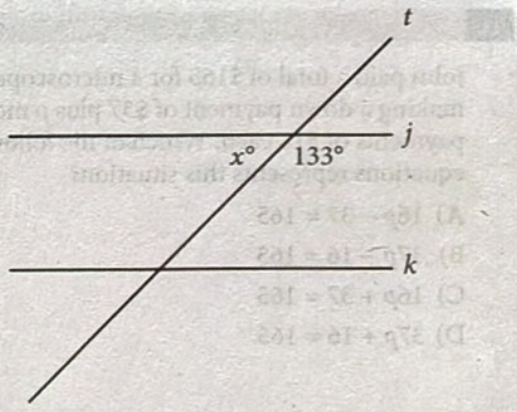
A) $13,400
B) $13,000
C) $15,400
D) $37,400

12

The function g is defined by $g(x) = 10x + 8$. What is the value of $g(x)$ when $x = 8$?

A) 0
B) 8
C) 10
D) 88

13



Note: Figure not drawn to scale.

In the figure, line j is parallel to line k. What is the value of x?

14

The graph of $7x + 2y = -31$ in the xy-plane has an x-intercept at $(a, 0)$ and a y-intercept at $(0, b)$, where a and b are constants. What is the value of $\frac{b}{a}$?

A) $-\frac{7}{2}$
B) $-\frac{2}{7}$
C) $\frac{2}{7}$
D) $\frac{7}{2}$

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CONTINUE

15

An object travels at a constant speed of 12 centimeters per second. At this speed, what is the time, in seconds, that it would take for the object to travel 108 centimeters?

A) 9

B) 96

C) 120

D) 972

16

John paid a total of \$165 for a microscope by making a down payment of \$37 plus p monthly payments of \$16 each. Which of the following equations represents this situation?

A) $16p - 37 = 165$

B) $37p - 16 = 165$

C) $16p + 37 = 165$

D) $37p + 16 = 165$

17

x	y
0	18
1	13
2	8

The table shows three values of x and their corresponding values of y. There is a linear relationship between x and y. Which of the following equations represents this relationship?

A) $y = 18x + 13$

B) $y = 18x + 18$

C) $y = -5x + 13$

D) $y = -5x + 18$

18

An object is kicked from a platform. The equation $h = -4.9t^2 + 7t + 9$ represents this situation, where h is the height of the object above the ground, in meters, t seconds after it is kicked. Which number represents the height, in meters, from which the object was kicked?

A) 0

B) 4.9

C) 7

D) 9

19

$$h(x) = x^2 - 3$$

Which table gives three values of x and their corresponding values of $h(x)$ for the given function h?

A)

x	1	2	3
$h(x)$	4	5	6

B)

x	1	2	3
$h(x)$	−2	1	6

C)

x	1	2	3
$h(x)$	−1	1	3

D)

x	1	2	3
$h(x)$	−2	1	3

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CONTINUE

20

In the linear function f, $f(0) = 8$ and $f(1) = 12$. Which equation defines f?

A) $f(x) = 12x + 8$

B) $f(x) = 4x$

C) $f(x) = 4x + 12$

D) $f(x) = 4x + 8$

21

$$14j + 5k = m$$

The given equation relates the numbers j, k, and m. Which equation correctly expresses k in terms of j and m?

A) $k = \frac{m - 14j}{5}$

B) $k = \frac{1}{5}m - 14j$

C) $k = \frac{14j - m}{5}$

D) $k = 5m - 14j$

22

$RS = 440$

$ST = 384$

$TR = 584$

The side lengths of right triangle RST are given. Triangle RST is similar to triangle UVW, where S corresponds to V and T corresponds to W. What is the value of tan W?

A) $\frac{48}{73}$

B) $\frac{55}{73}$

C) $\frac{48}{55}$

D) $\frac{55}{48}$

STOP

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MATH
MODULE 2

LEVEL OF DIFFICULTY
UPPER

Time: 35 minutes

Math

22 QUESTIONS

DIRECTIONS

The questions in this section address a number of important math skills.
Use of a calculator is permitted for all questions.

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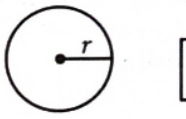
REFERENCE



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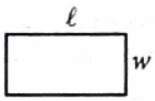
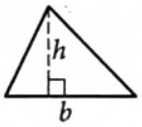
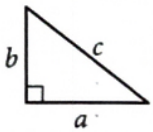


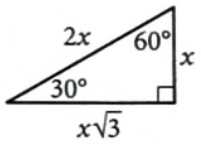
$A = \ell w$

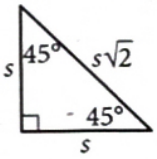


$A = \frac{1}{2}bh$

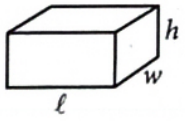


$c^2 = a^2 + b^2$

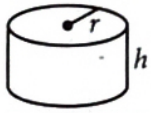




Special Right Triangles

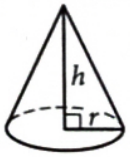


$V = \ell wh$

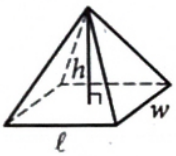


$V = \pi r^2 h$

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



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



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

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

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

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

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CONTINUE

For multiple-choice questions, solve each problem, choose the correct answer from the choices provided, and then circle your answer in this book. Circle only one answer for each question. If you change your mind, completely erase the circle. You will not get credit for questions with more than one answer circled, or for questions with no answers circled.

For student-produced response questions, solve each problem and write your answer next to or under the question in the test book as described below.

- Once you've written your answer, circle it clearly. You will not receive credit for anything written outside the circle, or for any questions with more than one circled answer.
- If you find **more than one correct answer**, write and circle only one answer.
- Your answer can be up to 5 characters for a **positive** answer and up to 6 characters (including the negative sign) for a **negative** answer, but no more.
- If your answer is a **fraction** that is too long (over 5 characters for positive, 6 characters for negative), write the decimal equivalent.
- If your answer is a **decimal** that is too long (over 5 characters for positive, 6 characters for negative), truncate it or round at the fourth digit.
- If your answer is a **mixed number** (such as $3\frac{1}{2}$), write it as an improper fraction (7/2) or its decimal equivalent (3.5).
- Don't include **symbols** such as a percent sign, comma, or dollar sign in your circled answer.

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CONTINUE

1

$$3x = 12$$
$$-3x + y = -6$$

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

A) -3
B) 6
C) 18
D) 30

2

Which expression is equivalent to $11x^3 - 5x^3$?

A) $16x^3$
B) $6x^3$
C) $6x^6$
D) $16x^6$

3

$$66x = 66x$$

How many solutions does the given equation have?

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

4

A proposal for a new library was included on an election ballot. A radio show stated that 3 times as many people voted in favor of the proposal as people who voted against it. A social media post reported that 15,000 more people voted in favor of the proposal than voted against it. Based on these data, how many people voted against the proposal?

A) 7,500
B) 15,000
C) 22,500
D) 45,000

5

Caleb used juice to make popsicles. The function $f(x) = -5x + 30$ approximates the volume, in fluid ounces, of juice Caleb had remaining after making x popsicles. Which statement is the best interpretation of the y-intercept of the graph of $y = f(x)$ in the xy-plane in this context?

A) Caleb used approximately 5 fluid ounces of juice for each popsicle.
B) Caleb had approximately 5 fluid ounces of juice when he began to make the popsicles.
C) Caleb had approximately 30 fluid ounces of juice when he began to make the popsicles.
D) Caleb used approximately 30 fluid ounces of juice for each popsicle.

6

An angle has a measure of $\frac{16\pi}{15}$ radians. What is the measure of the angle, in degrees?

7

$$y \leq x + 7$$
$$y \geq -2x - 1$$

Which point (x, y) is a solution to the given system of inequalities in the xy-plane?

A) $(-14, 0)$
B) $(0, -14)$
C) $(0, 14)$
D) $(14, 0)$

8

A right triangle has legs with lengths of 24 centimeters and 21 centimeters. If the length of this triangle's hypotenuse, in centimeters, can be written in the form $3\sqrt{d}$, where d is an integer, what is the value of d?

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CONTINUE

9

Value	Data set A frequency	Data set B frequency
30	2	9
34	4	7
38	5	5
42	7	4
46	9	2

Data set A and data set B each consist of 27 values. The table shows the frequencies of the values for each data set. Which of the following statements best compares the means of the two data sets?

A) The mean of data set A is greater than the mean of data set B.

B) The mean of data set A is less than the mean of data set B.

C) The mean of data set A is equal to the mean of data set B.

D) There is not enough information to compare the means of the data sets.

10

Triangle XYZ is similar to triangle RST such that X, Y, and Z correspond to R, S, and T, respectively. The measure of $\angle Z$ is 20° and $2XY = RS$. What is the measure of $\angle T$?

A) 2°

B) 10°

C) 20°

D) 40°

11

Keenan made 32 cups of vegetable broth. Keenan then filled x small jars and y large jars with all the vegetable broth he made. The equation $3x + 5y = 32$ represents this situation. Which is the best interpretation of $5y$ in this context?

A) The number of large jars Keenan filled

B) The number of small jars Keenan filled

C) The total number of cups of vegetable broth in the large jars

D) The total number of cups of vegetable broth in the small jars

12

$$x(x + 1) - 56 = 4x(x - 7)$$

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

13

The function $f(x) = \frac{1}{9}(x - 7)^2 + 3$ gives a metal ball's height above the ground $f(x)$, in inches, x seconds after it started moving on a track, where $0 \leq x \leq 10$. Which of the following is the best interpretation of the vertex of the graph of $y = f(x)$ in the xy-plane?

A) The metal ball's minimum height was 3 inches above the ground.

B) The metal ball's minimum height was 7 inches above the ground.

C) The metal ball's height was 3 inches above the ground when it started moving.

D) The metal ball's height was 7 inches above the ground when it started moving.

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CONTINUE

14

$$F(x) = \frac{9}{5}(x - 273.15) + 32$$

The function F gives the temperature, in degrees Fahrenheit, that corresponds to a temperature of x kelvins. If a temperature increased by 2.10 kelvins, by how much did the temperature increase, in degrees Fahrenheit?

A) 3.78

B) 35.78

C) 487.89

D) 519.89

15

x	y
k	13
$k + 7$	-15

The table gives the coordinates of two points on a line in the xy-plane. The y-intercept of the line is $(k - 5, b)$, where k and b are constants. What is the value of b?

16

One of the factors of $2x^3 + 42x^2 + 208x$ is $x + b$, where b is a positive constant. What is the smallest possible value of b?

17

The function f is defined by $f(x) = 7x - 84$. What is the x-intercept of the graph of $y = f(x)$ in the xy-plane?

A) $(-12, 0)$

B) $(-7, 0)$

C) $(7, 0)$

D) $(12, 0)$

18

A certain park has an area of 11,863,808 square yards. What is the area, in square miles, of this park? (1 mile = 1,760 yards)

A) 1.96

B) 3.83

C) 3,444.39

D) 6,740.8

19

One gallon of paint will cover 220 square feet of a surface. A room has a total wall area of w square feet. Which equation represents the total amount of paint P, in gallons, needed to paint the walls of the room twice?

A) $P = \frac{w}{110}$

B) $P = 440w$

C) $P = \frac{w}{220}$

D) $P = 220w$

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20

$$48x - 72y = 30y + 24$$

$$ry = \frac{1}{6} - 16x$$

In the given system of equations, r is a constant. If the system has no solution, what is the value of r?

21

$$\frac{x^2}{\sqrt{x^2 - c^2}} = \frac{c^2}{\sqrt{x^2 - c^2}} + 39$$

In the given equation, c is a positive constant. Which of the following is one of the solutions to the given equation?

A) $-c$

B) $-c^2 - 39^2$

C) $-\sqrt{39^2 - c^2}$

D) $-\sqrt{c^2 + 39^2}$

22

$$f(x) = ax^2 + 4x + c$$

In the given quadratic function, a and c are constants. The graph of $y = f(x)$ in the xy-plane is a parabola that opens upward and has a vertex at the point (h, k), where h and k are constants. If $k < 0$ and $f(-9) = f(3)$, which of the following must be true?

I. $c < 0$

II. $a \geq 1$

A) I only

B) II only

C) I and II

D) Neither I nor 11

STOP

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

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END OF TEST

Please send all completed answer grids to Perfect Score Test Prep at perfectscoretestprep@gmail.com. Scores are typically returned in 5-7 business days.

For more information regarding classes or one-one private tutoring, please visit www.perfectscoretestprep.com or call 518.364.7908 and ask for Justin Vanwely

SAT Practice Test Worksheet: Answer Key Test #1

Mark each of your correct answers below, then add them up to get your raw score on each module.

Reading and Writing

Module 1

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

Module 2

Math

Module 1

QUESTION #	CORRECT	MARK YOUR CORRECT ANSWERS
1	A	
2	B	
3	A	
4	D	
5	A	
6	.3, 3/10	
7	C	
8	5	
9	B	
10	A	
11	B	
12	B	
13	C	
14	B	
15	40	
16	D	
17	C	
18	A	
19	.8823, .8824, 15/17	
20	6.25, 25/4	
21	24	
22	20.25, 81/4	

Module 2

READING AND WRITING SECTION RAW SCORE
(Total # of Correct Answers, Excluding Grayed-Out Rows)

Module 1 _____ Module 2 _____

MATH SECTION RAW SCORE
(Total # of Correct Answers, Excluding Grayed-Out Rows)

Module 1 _____ Module 2 _____