

Section 1, Module 1: Reading and Writing

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.

The following text is adapted from Kenneth Grahame's 1908 novel *The Wind in the Willows*. The Mole is dazed after briefly meeting a stranger while traveling with a friend.

[The] Mole stood still a moment, held in thought. As one wakened suddenly from a beautiful dream, who struggles to recall it, and can re-capture nothing but a dim sense of the beauty of it, the beauty! Till that, too, fades away in its turn.

1

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

(A) Abruptly

(B) Repeatedly

(C) Voluntarily

(D) Tenderly

MISSING

2

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

(A)

From sculptures like Miró's *Chicago* by Joan Miró, found at Brunswick Plaza, to street art like Justus Roe's mural *South Shore* on South Exchange Avenue, Chicago offers an array of works to ____ the tastes of art lovers.

3

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

(A) supplant

(B) mitigate

(C) venerate

(D) satiate

Writer Lydia Davis observed that while traditional literary forms, such as the novel, are recognizable as such even as they evolve, there are rarer "intergeneric" forms that might, for example, use elements of both fiction and essays to create something _____. The late-period pieces of James Tate arguably fit this description, since they straddle the line between prose and poetry.

4

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

(A) orthodox

(B) unequivocal

(C) recurrent

(D) unclassifiable

Alfred Nobel intended for the Nobel Prize to be an award honoring those who have contributed “the greatest benefit to mankind.” Indeed, the work of Richard Laurence Millington Synge represented a significant _____ the field of chemistry, and in 1952 he was among those awarded the Nobel Prize in Chemistry for “their invention of partition chromatography.”

5

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

- (A) exposure to
- (B) advancement in
- (C) dependence on
- (D) controversy in

The following text is adapted from Adib Khorram’s 2018 novel *Darius the Great Is Not Okay*. Darius, a teenager from the United States, is visiting his grandparents, Babou and Mamou, in Iran. They are preparing for a holiday celebration.

I felt like a tourist.

But Babou fussed with my cap a little more, even though Mamou had already gotten it settled. He looked me in the eye from time to time, like he was looking for something, and thought maybe—just maybe—I had it in me after all.

Babou hummed to himself as he smoothed out my shoulder seams and rested his hands on them.

“I am glad you are here to see this, Dariush-jan.”
Maybe I wasn’t such a tourist.

6

Which choice best states the main purpose of the text?

- (A) To emphasize that Darius has been looking forward to an event
- (B) To demonstrate that Darius and Babou would prefer not to travel
- (C) To show that Babou affects the way Darius thinks of himself
- (D) To suggest that Babou and Mamou will visit Darius in the United States soon

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The following text is from Lady Gregory's 1904 play *Spreading the News*. Mrs. Tarpey, Bartley, and Mrs. Fallon have been buying and selling goods at the local fair.

MRS. TARPEY: Good Morrow, Bartley Fallon; good Morrow, Mrs. Fallon. Well, Bartley, you'll find no cause for complaining to-day; they are all saying it was a good fair.

BARTLEY: (*Raising his voice.*) It was not a good fair. Mrs. Tarpey. It was a scattered sort of a fair. If we didn't expect more, we got less. That's the way with me always; whatever I have to sell goes down and whatever I have to buy goes up. If there's ever any misfortune coming to this world, it's on myself it pitches, like a flock of crows on seed potatoes.

7

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

- (A) It presents a vivid image to emphasize a claim that Bartley makes.
- (B) It describes an event that Bartley observed at the fair.
- (C) It expresses doubt about the truth of a claim that Bartley made.
- (D) It indicates the degree to which Mrs. Tarpey doubts a certain event will occur.

The 2017 novella *Mapping the Interior* confirmed that Stephen Graham Jones is one of the most talented writers of horror fiction today. By featuring main characters who are Blackfeet, like Jones himself, the novella also helped to ensure that Indigenous people have a place within the horror genre. But Jones is hardly the only Indigenous voice in horror: Métis author Cherie Dimaline has also written in the genre. Her acclaimed 2019 novel *Empire of Wild* is set in a Métis community in southern Canada.

8

Which choice best describes the function of the underlined sentence?

- (A) It challenges the widely held view that Stephen Graham Jones based *Mapping the Interior* on events in his own life.
- (B) It asks why so many readers who don't enjoy the horror genre have purchased *Mapping the Interior*.
- (C) It highlights the significance of the portrayal of Indigenous people in *Mapping the Interior*.
- (D) It predicts that non-Indigenous authors will include more Indigenous characters in their work.

The following text is from Frances E. W. Harper's 1892 novel *Jola Leroy*. The text describes Robert Johnson, who has recently joined the US Army.

He was daring, without being rash; prompt, but not thoughtless; firm, without being harsh. Kind and devoted to the company he drilled, he soon won the respect of his superior officers and the love of his comrades.

9

Which choice best states the main idea of the text?

- (A) Robert has put great effort into getting the attention of his superior officers.
- (B) Robert is well suited to his role in the military.
- (C) Robert is content with his life despite having made some mistakes.
- (D) Robert does whatever his comrades need done even if his superiors don't order him to do so.

Researchers César A. Hidalgo, Elisa Castañer, and Andres Sevtsuk created a computer model to predict the mix of gyms, beauty salons, and other businesses found in a given neighborhood. How we define a neighborhood and its boundaries is subjective, so the team used a clustering algorithm to locate dense groupings of amenities that represent human-identified neighborhoods like Boston's Central Square. The predictive model, which incorporates this algorithm, is sure to be invaluable in determining the optimal mix of a city's amenities.

10

According to the text, why did the team employ a clustering algorithm?

- (A) The algorithm provided insight into how customers are made aware of new gyms and beauty salons.
- (B) The algorithm gave them an objective way to identify neighborhoods.
- (C) The algorithm could be used to evaluate the reasons for a business's closing.
- (D) The algorithm could predict which types of businesses would be successful in a given neighborhood.

Pyramids in Egypt and the Americas

Pyramid	Country	Height (meters)	Age (years before present)
The Great Pyramid	Mexico	33	2,050 to 2,400
The Pyramid of Djoser	Egypt	60	4,600 to 4,700
The Pyramid of Sahure	Egypt	47	4,400 to 4,500
El Castillo	Belize	40	1,100 to 1,400

A student is writing an essay about four pyramids for a history class and wants to note how long ago each pyramid was built and how tall each pyramid is. Consulting the table, the student finds that the Pyramid of Djoser was built 4,600 to 4,700 years ago and is _____.

11

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

- (A) 60 meters tall.
- (B) 47 meters tall.
- (C) 33 meters tall.
- (D) 40 meters tall.

In a paper for an art history class, a student claims that Gwen John's circa 1915 painting *Mère Poussepain* marks a significant change in John's artistic development.

12

Which quotation from an art history textbook would most effectively support the student's claim?

- (A) "Mère Poussepain has been analyzed extensively since it was first exhibited, as no two viewers seem to agree about exactly what the painting means."
- (B) "Of all John's paintings, none so clearly represents her abilities and ideas as *Mère Poussepain*."
- (C) "The paintings that John produced before *Mère Poussepain* can be thought of as belonging to her earlier style, to which she never returned."
- (D) "Although John was clearly influenced by other artists of her time, she was also an artist ahead of her time, as *Mère Poussepain* demonstrates."

Monthly Temperatures and Wing Centroid Sizes of Fruit Fly Specimens

Month	Average high (°F)	Average low (°F)	Average male wing centroid size (mm)	Average female wing centroid size (mm)
October	67	44	1.98	2.29
May	73	50	1.98	2.27
July	87	62	2.02	2.31
September	80	54	1.98	2.27

Drosophila (fruit flies) have generation times of 10–12 days, so seasonal changes in humidity and other environmental conditions can drive seasonal fluctuations in chromosome rearrangements in species such as *D. persimilis* and *D. subobscura*. *Drosophila* body size (for which wing centroid size serves as a proxy measure) correlates with life span. Banu Sebnem Önder and Cansu Fidan Aksoy measured the wing sizes of members of a *D. melanogaster* population in Yesilöz, Turkey, that were collected monthly between May and October over three years. Their research suggests that *Drosophila* collected in relatively warmer months should tend to have a longer life span, as is illustrated by the finding that _____.

13

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

- (A) the average female wing centroid size was consistently larger than the average male wing centroid size in all four months in the table.
- (B) the average male wing centroid size was larger in July than in October.
- (C) the average female wing centroid size was 2.02 mm in July but was 2.27 mm in September.
- (D) the average monthly low temperature was higher in September than in May.

Over 600 languages are spoken in New York City in addition to English—one can find Acehnese spoken in the neighborhood of Astoria, or Ilocano in Woodside. Most speakers of Chinese languages reside in the neighborhood of Flushing (part of New York City's borough of Queens), where the dominant Chinese language is Mandarin, and in Chinatown, in the borough of Manhattan, where the dominant Chinese languages are Cantonese and Fuzhouinese. Mandarin is widely spoken in north China, while Cantonese and Fuzhouinese are widely spoken in south China. It can therefore be inferred that _____

14

Which choice most logically completes the text?

- (A) people who emigrate from north China tend to settle in Flushing, while people who emigrate from south China tend to settle in Chinatown.
- (B) Chinese immigrants regularly change their residences between Queens and Manhattan after they emigrate, rather than staying in one borough.
- (C) Chinese immigrants who emigrated to New York City many years ago are more likely to speak several Chinese languages than are more recent Chinese immigrants.
- (D) taken together, there are more Cantonese and Fuzhouinese speakers among Chinese immigrants in New York than there are Mandarin speakers.

The Bronze Age in Britain lasted from around 2500 BCE to approximately 700 BCE. Collections of metal items (called hoards) from all periods of the Bronze Age have been found in Britain, including the Llanarmon-yn-Iâl hoard of artifacts from the 16th century BCE, unearthed around 1982, and the much later Horsehope Craig hoard of artifacts from the 7th century BCE, unearthed around 1865. Sometime in the Middle Bronze Age (approximately from the 14th century BCE to the 10th century BCE), metalsmiths in Britain began to develop swords for the first time. This fact helps explain why, whereas evidence of sword production was found in _____

15

Which choice most logically completes the text?

- (A) both the Llanarmon-yn-Iâl hoard and the Horsehope Craig hoard, only the latter included evidence of more refined sword production.
- (B) hoards discovered before 1865, no such evidence was found in hoards that were discovered later.
- (C) the Llanarmon-yn-Iâl hoard, no intact swords were found among the items in the hoard.
- (D) the Horsehope Craig hoard, no such evidence was found in the Llanarmon-yn-Iâl hoard.

Home to roughly 710,000 people, ____

16

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

A the city of Riga contains an impressive 35 percent of Latvia's total population.

B contained within the city of Riga is an impressive 35 percent of Latvia's total population.

C of Latvia's total population, an impressive 35 percent is contained in the city of Riga.

D an impressive 35 percent of Latvia's total population is contained within the city of Riga.

The size of bird eggs varies widely across species, and the researchers, ___, computer imaging to compare the lengths of eggs from species like *Buteo albicaudatus* and *Treron vernans*, aimed to shed light on the evolutionary basis for such variation.

17

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

A to use

B using

C used

D use

Featuring works by the photographers Liselotte Grschebina and Else "Yva" Neuländer-Simon, the 2021 exhibition *The New Woman Behind the Camera* set out to provide a wide-ranging overview of photography by women in the 1920s through the ____ given the collection's breadth of more than 120 photos, its efforts were largely successful.

18

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

(A) 1950s, and

(B) 1950s

(C) 1950s,

(D) 1950s and

In their 2019 study of butterfly diversity at Rupa Lake in Nepal, researcher Bandana Subedi and her colleagues counted 1,535 butterflies from 138 different species, including one specimen of the Doleschallia bisaltide, a very rare butterfly known among lepidopterists as the autumn leaf.

19

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

A species

B species;

C species:

D species,

Sei Shōnagon composed many ____ "Things That Have Lost Their Power," which appears in her tenth-century account of Japanese courtly life, *Pillow Book*, she laments boats run aground, toppled trees, and defeated wrestlers.

20

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

(A) lists;

(B) lists in

(C) lists. In

(D) lists:

When ____ debuted in January 1983 as part of the exhibit *Women of Clay*, the artworks brought vibrant visual texture to the bustling terminals of San Francisco International Airport.

21

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

(A) they

(B) that

(C) it

(D) this

Section 1, Module 1: Reading and Writing

OCTOBER 7, 2023 INT

One might assume that Germany's Amrumbank West offshore wind farm produces the same amount of energy as land-based wind farms of a similar size. _____ because wind speeds over open water are generally higher than those over land, Amrumbank West's turbines turn faster and produce more energy than do most land farms' turbines.

22

Which choice completes the text with the most logical transition?

- (A) Actually,
- (B) For example,
- (C) Therefore,
- (D) Finally,

Those who looked up at the right time on July 9, 1926, would have witnessed an annular solar eclipse, during which the Moon blocks most of the Sun and causes it to look like a ring of light. _____ stargazers on December 24, 1927, would have seen a partial solar eclipse, during which the Moon only blocks a portion of the Sun and causes it to look like a crescent.

23

Which choice completes the text with the most logical transition?

- (A) As a result,
- (B) On the other hand,
- (C) Simultaneously,
- (D) Indeed,

For several centuries after the birth of opera in sixteenth-century Florence, Italian remained the default language in which most opera scores were written. ____ opera singers today, such as the mezzo-soprano J’Nai Bridges, encounter a wide range of Italian terms—from *con amore* (with love) to *moderato* (at a moderate tempo)—when following many eighteenth-century opera scores.

24

Which choice completes the text with the most logical transition?

- (A) Consequently,
- (B) However,
- (C) Lastly,
- (D) Granted,

- Silent films can be valuable historical documents of their time.
- Ninety percent of silent films made before 1930 are now lost.
- A film is considered lost when no remaining copies are known to exist.
- Director Oscar Micheaux’s 1922 silent film *The Dungeon* is lost.
- Director Jay Marchant’s 1925 silent film *The Fighting Ranger* is lost.
- Archives such as the Pacific Film Archive in Berkeley, California, help preserve some of the remaining films from the 1920s.

25

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

- (A) *The Dungeon* (1922) was directed by Oscar Micheaux, and *The Fighting Ranger* (1925) was made by Jay Marchant.
- (B) Archives such as the Pacific Film Archive in Berkeley, California, play an integral part in preserving some of the surviving silent films from the 1920s.
- (C) Jay Marchant’s 1925 film *The Fighting Ranger* is now considered lost, meaning no copies are known to exist.
- (D) *The Dungeon* (1922) and *The Fighting Ranger* (1925) would be valuable historical documents of the era, but sadly both silent films are lost.

- The Botswana Federation of Trade Unions (BFTU) is a national union federation for the African nation of Botswana.
- It helps improve conditions for workers in that nation.
- ITUC-Africa is a regional union federation that represents national union federations across Africa.
- It represents the BFTU.

26

Which choice most effectively uses information from the given sentences to explain the relationship between ITUC-Africa and the BFTU?

- (A) ITUC-Africa is a regional union federation.
- (B) The BFTU is one of the national union federations represented by ITUC-Africa.
- (C) National union federations, such as the BFTU, work to improve conditions for workers in their member nations.
- (D) The BFTU is a national union federation.

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

- The United States has designated more than 500 areas National Wildlife Refuges (NWRs).
- Some NWRs were established specifically to protect endangered species.
- The James River NWR is a 4,147-acre area in Virginia, on the Atlantic coast.
- It was established to protect the endangered bald eagle.
- The Hopper Mountain NWR is a 2,471-acre area in California, on the Pacific coast.
- It was established to protect the endangered California condor.

27

The student wants to contrast the two NWRs. Which choice most effectively uses relevant information from the notes to accomplish this goal?

- (A) While the James River NWR is in Virginia, on the Atlantic coast, the Hopper Mountain NWR is in California, on the Pacific coast.
- (B) The US has designated more than 500 areas NWRs, including the James River NWR in Virginia.
- (C) Both the James River NWR and the Hopper Mountain NWR were established to protect endangered species.
- (D) Some NWRs were established specifically to protect endangered species such as the California condor.

Section 1, Module 2: Reading and Writing

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.

British painter Peter Edwards has a ____ painting portraits of notable figures from a variety of different fields. These characteristic works include his esteemed portraits of poet Seamus Heaney and casting director Ruth Lambert.

1

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

(A) reputation for

(B) requirement for

(C) complaint about

(D) question about

Ji-li Jiang's book *Red Kite, Blue Kite* has earned a lot of praise. In fact, the book ____ the Asian/Pacific American Award for Literature.

2

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

(A) guessed

(B) blamed

(C) received

(D) forgot

The equipment from the Apollo Moon landings (1969–1972), such as solar wind sensors and seismic sensors, remains there to this day, but the data from these missions were mostly inaccessible until a recent data-transfer project made them _____. This project has allowed researcher Renee Weber to make use of the information in investigating tectonic activity on the Moon.

3

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

- (A) complicated
- (B) representative
- (C) available
- (D) predictable

One way to ____ the importance of a scholar's research is to track how often other scholars refer to that research. For example, University of California-Berkeley economist Ulrike Malmendier, who studies behavioral economics, is among the world's most frequently cited researchers in her field, indicating that her work has been quite significant.

4

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

- (A) assess
- (B) utilize
- (C) influence
- (D) undermine

Horizontal gene transfer involves the exchange of genetic material between organisms not in a parent-offspring relationship. It is common among prokaryotes (single-celled organisms, such as the bacteria *Carnobacterium viridans* and *Lactococcus lactis*). The process can have the effect of increasing bacterial resistance to antibiotics; as such, an understanding of how to prevent horizontal gene transfer might result in the mitigation of dangerous pathogens (organisms that cause disease).

5

Which choice best describes the overall structure of the text?

- (A) It provides a history of research into a biological process and suggests a direction for further investigation.
- (B) It explains why an organism poses a threat and then suggests how that threat might be avoided.
- (C) It depicts two organisms and presents their similarities and differences.
- (D) It describes a biological process and explains why researching it is important.

Text 1

In 2019 Bergamo, Italy, was named a City of Gastronomy by UNESCO in recognition of the city's unique food culture. The honor is well known among both residents of the city and tourists who visit. It's obvious that the selection of Bergamo by UNESCO has brought awareness to local recipes, cooking practices, and chefs and has provided a boost to the city's tourism industry.

Text 2

Many residents of Bergamo hoped that food tourism would increase after the city was chosen as a City of Gastronomy in 2019. However, as researcher Eerang Park and colleagues argue, cities must still create effective marketing strategies to benefit fully from being named a City of Gastronomy. Without an intentional effort to promote the city's food scene, many current and potential visitors to Bergamo may not even be aware that it's home to uniquely delicious food.

6

Based on the texts, how would the author of Text 2 most likely respond to the underlined claim in Text 1?

- (A) By arguing that UNESCO's recognition of Bergamo was well deserved because of the city's delicious food
- (B) By suggesting that Bergamo's status as a City of Gastronomy may not be well known outside of Italy
- (C) By noting that there are other benefits to being named a City of Gastronomy besides increased tourism
- (D) By claiming that Bergamo's chefs were mainly responsible for the city's recognition by UNESCO

Known for the albums *Quiet Nights* and *Milestones*, jazz trumpeter Miles Davis collaborated several times with pianist Gil Evans. Their 1958 adaptation of George Gershwin's opera *Porgy and Bess* bears little resemblance to the 1935 original. Davis and Evans felt no desire to please listeners expecting an exact duplication of the opera. They omitted parts, such as the aria "I Got Plenty of Nuthin'," and sometimes made only brief gestures toward Gershwin's melodies. But Davis and Evans's willingness to recompose Gershwin's work led to one of the most enduring albums in Davis's catalog.

7

According to the text, what is true about the aria "I Got Plenty of Nuthin'?"

- (A) It appears in the Gershwin opera *Porgy and Bess* but not in the adaptation by Davis and Evans.
- (B) A brief quotation from it appears in Davis and Evans's adaptation of *Porgy and Bess*.
- (C) Listeners familiar with Gershwin's body of work generally disliked it.
- (D) It was adapted by Davis in a recording that appears on his album *Milestones*.

The following text is adapted from Daniel Defoe's 1704 nonfiction book *The Storm*.

The sermon is a sound of words spoken to the ear, and prepared only for present meditation, and extends no farther than the strength of memory can convey it; a book printed is a record, remaining in every man's possession, always ready to renew its acquaintance with his memory, and always ready to be produced as an authority or voucher to any reports he makes out of it, and conveys its contents for ages to come, to the eternity of mortal time, when the author is forgotten in his grave.

8

Which choice best states the main idea of the text?

- (A) Words committed to print have a greater permanence than messages that are merely spoken aloud.
- (B) People are less likely to forget a message when they hear it spoken aloud than they are when they read it in print.
- (C) Unless a spoken message is delivered by an expert, it can be safely ignored.
- (D) Most authors have little hope of being remembered well past their lifetimes.

Brown Bears in Katmai National Park, Alaska

Bear Identification number	Sex	Age (years)	Approximate weight number (pounds)
106	female	6	400
119	male	10	800
183	female	13	375
122	male	3	200

Scientists collected information about brown bears in Katmai National Park in Alaska. This information included each bear's sex, age, and approximate weight. The bear with the lowest approximate weight shown in the table was a _____.

9

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

- (A) female that was 13 years old.
- (B) female that was 6 years old.
- (C) male that was 10 years old.
- (D) male that was 3 years old.

Cumulative Counts of Fish in Three Taiwanese Tide Pools, 1999–2018

Species	Station 1	Station 2	Station 3
barred flagtail	249	64	16
streaky rockskipper	125	139	610
blackspotted rockskipper	83	74	31
Cocos frillgoby	50	64	90

Lin-Tai Ho and colleagues tracked fish populations in three tide pool-monitoring stations in Taiwan from 1999 to 2018. The streaky rockskipper was especially common at station 3: there, the researchers counted _____.

10

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

- (A) 90 streaky rockskippers.
- (B) 610 streaky rockskippers.
- (C) 125 streaky rockskippers.
- (D) 249 streaky rockskippers.

Cane is a 1923 novel by Jean Toomer. In one portion of the novel, Toomer uses figurative language to connect the narrator's urban environment of Washington, DC, and the rural South of the narrator's past, writing.

11

Which quotation from *Cane* most effectively illustrates the claim?

- (A) "And when the wind is from the South, soil of my homeland falls like a fertile shower upon the lean streets of [Washington, DC]."
- (B) "The young trees had not outgrown their [planter] boxes then. V Street [in Washington, DC] was lined with them."
- (C) "The Capitol dome looked like a gray ghost ship drifting in from sea."
- (D) "The [train] engines of this valley have a whistle, the echoes of which sound like iterated gasps and sobs. I always think of them as crude music."

A student is writing a research paper on the history of irrigation in the southwestern United States, situating the development of Lake Sabrina (a man-made body of water created in Inyo County, California, in 1908) in a larger historical context. In order to emphasize irrigation's importance, the student claims that irrigation is humanity's principal use of water.

12

Which quotation from a study of irrigation best supports the student's claim?

- (A) "The first known irrigation system was built in the 7th century CE by the Hohokam people, a Native population in the American Southwest that inhabited central Arizona."
- (B) "Roughly 70% of the world's water withdrawals, from sources such as rivers, lakes, and aquifers, is for irrigation water used to meet various agricultural demands."
- (C) "Today, many areas of the southwestern United States utilize sprinkler irrigation systems, which require machinery that can spray water in all directions."
- (D) "The irrigation system developed by the Hohokam people in the 7th century CE in what is now known as central Arizona was simple but applied hydraulic engineering design features that are still used today."

Section 1, Module 2: Reading and Writing

OCTOBER 7, 2023 INT

The Arapaho language of the Plains region in the United States has 16 vowel and consonant sounds. In contrast, the Hadza language of eastern Africa has 70. Why would languages differ in this way? One researcher has hypothesized that when modern humans arose in Africa, they spoke a single language, but as humans gradually spread throughout Africa and then around the globe, that language developed into new languages. Those developed into still more languages as small bands of humans spread even farther, with each new language retaining fewer sounds from humanity's original language.

13

Which finding, if true, would best support the researcher's hypothesis?

- (A) Languages that emerged in northwestern North America tend to have more sounds than languages that emerged in East Asia do, even though northwestern North America is farther away from Africa than East Asia is.
- (B) Languages that emerged in Eastern Europe tend to have more sounds than languages that emerged in East Asia do, and Eastern Europe is closer to Africa than East Asia is.
- (C) Languages that emerged in Western Europe tend to have fewer sounds than languages that emerged in East Asia do, and Western Europe is closer to Africa than East Asia is.
- (D) Languages that emerged in Southeast Asia tend to have more sounds than languages that emerged in East Asia do, even though the two regions are roughly the same distance from Africa.

MISSING

14

Which choice most logically completes the test?

MISSING

15

Which choice most logically completes the text?

In 2014, actor Keith David voiced the character Old Buzzard in the film *Birds of Paradise*. David has acted in everything from commercials to Broadway musicals, but his voice acting work is why _____. _____

16

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

- (A) has he become such a celebrated talent?
- (B) has he become such a celebrated talent.
- (C) he has become such a celebrated talent?
- (D) he has become such a celebrated talent.

Ann Greely of Maine _____ a fierce advocate of women's voting rights in the late 1800s. The dedication of Greely and her fellow activists was rewarded in 1920, when the Nineteenth Amendment to the US Constitution guaranteed American women the right to vote.

17

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

- (A) was
- (B) have been
- (C) are
- (D) were

The city of Quito in Ecuador ____ one of the rare places in the world located almost directly on the equator.

18

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

- (A) is
- (B) have been
- (C) are
- (D) are being

On February 1, 2018, Florida-based researchers Martha A. Scholl, Maoya Bassiouni, and Angel J. Torres-Sánchez compiled climate data from several sites in Puerto Rico's Luquillo Mountains. At CC1, the site with the highest elevation, the air temperature fluctuated slightly throughout the day, ____ 11:00 a.m. to 16.2°C at 7:00 p.m.

19

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

- (A) from, 18.4°C at
- (B) from, 18.4°C at,
- (C) from 18.4°C at
- (D) from: 18.4°C at,

To study the ultrafast movements of atoms, chemist Ahmed Zewail had to devise a novel spectroscopy technique capable of measuring chemical reactions within molecules at a quadrillionth of a second. Ultimately, Zewail succeeded and was eventually honored with the Robert A. Welch Award and the Albert Einstein World Award of Science for this groundbreaking achievement.

20

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

- (A) occurred
- (B) occurring
- (C) occur
- (D) will occur

Many experts, like lawyer and cycling advocate Ernesto Hernandez-Lopez, have proposed bike travel as one possible way to alleviate congestion on the busy roadways of Los Angeles County, California. Indeed, local bicycle paths like the Harbor Park bicycle _____ have become an increasingly popular means of travel for commuter and recreational trips alike.

21

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

- (A) path, which is about 0.38 miles long
- (B) path which is about 0.38 miles long
- (C) path: which is about 0.38 miles long,
- (D) path, which is about 0.38 miles long,

When using hairy coneflower for dyeing cloth, textile artists first soak it in water to release its color. Next, they add the cloth to the dye bath and simmer it for hours, perhaps even days. ____ they remove the cloth from the dyebath, revealing that the cloth has turned a vibrant blue color.

22

Which choice completes the text with the most logical transition?

(A) Finally,

(B) However,

(C) Therefore,

(D) Actually,

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

23

Which choice completes the text with the most logical transition?

(A) Besides,

(B) However,

(C) On the contrary,

(D) In fact,

Section 1, Module 2: Reading and Writing

OCTOBER 7, 2023 INT

- Antonio Stradivari (1644–1737) made about 1,000 violins in his lifetime.
- Musicians prize his Stradivarius violins for their famed sound quality.
- Many of the 500 or so that exist today are named for a previous owner.
- The Leonora Jackson Stradivarius is named for Leonora Jackson, an American violinist.

24

Which choice most effectively uses information from the given sentences to emphasize why Stradivarius violins are prized by musicians?

- (A) Many Stradivarius violins, like the Leonora Jackson, get their name from a former owner.
- (B) Among musicians, violins made by Antonio Stradivari are renowned for their sound quality.
- (C) Antonio Stradivari, a famous violin maker, lived from 1644 to 1737.
- (D) Leonora Jackson was an American violinist who once owned a Stradivarius violin.

- Gianpaolo Bellini is an Italian particle physicist.
- Particle physicists study subatomic particles.
- Neutrinos are some of the least understood subatomic particles.
- Neutrinos were first discovered in the mid-twentieth century.
- Bellini is known for his research on solar and geoneutrinos.

25

Which choice most effectively uses information from the given sentences to specify Bellini's role in neutrino research?

- (A) Particle physicist Gianpaolo Bellini has worked to advance the scientific understanding of neutrinos through his research on solar and geoneutrinos.
- (B) Neutrinos are a type of subatomic particle that particle physicists are still trying to understand.
- (C) First discovered in the mid-twentieth century, neutrinos are a type of subatomic particle.
- (D) Gianpaolo Bellini is recognized for his particle physics research.

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

- Hina Hanta is an online archive curated by the Choctaw Nation of Oklahoma.
- It features images of cultural artifacts relevant to the history of the Choctaw people.
- It features a spoon (*ivpish ishtimpa* in Choctaw) made of buffalo horn.
- The spoon was made in 1800.
- Hina Hanta features a purse (*shukcha* in Choctaw) made of beaded leather.
- The purse was made in 1949.

26

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

- (A) The buffalo horn spoon (*ivpish ishtimpa* in Choctaw) is featured in the Hina Hanta archive.
- (B) Featured in the Hina Hanta archive, the buffalo horn spoon and the beaded leather purse are both cultural artifacts relevant to the history of the Choctaw people.
- (C) Not all artifacts in the Hina Hanta archive are from the 1800s; indeed, the beaded leather purse is from 1949.
- (D) There are more recent artifacts in the Hina Hanta archive than the buffalo horn spoon from 1800.

- At London and New York Fashion Weeks, fashion designers debut new clothing collections.
- Color consultants create trend reports on the popular colors at a given Fashion Week.
- A report on 2018 London Fashion Week noted the popularity of an imaginative purple shade that was cool in tone and bright in intensity.
- A report on 2019 New York Fashion Week noted the popularity of a deep red shade that was warm in tone and rich in intensity.

27

Which choice most effectively uses information from the given sentences to explain the role of color consultants at Fashion Week?

- (A) A shade of imaginative purple was an on-trend addition to one color consultant's report on 2018 London Fashion Week.
- (B) A color consultant report on 2019 New York Fashion Week highlighted the popularity of a deep red shade.
- (C) At Fashion Weeks in 2018 and 2019, shades favored by designers included an imaginative purple and a deep red.
- (D) Each Fashion Week, color consultants compile reports on the shades that have proved popular with fashion designers.

1

$$s = 50 + 4t$$

The equation gives the speed s , in miles per hour, of a certain car t seconds after it began to accelerate. What is the speed, in miles per hour, of the car 2 seconds after it began to accelerate?

- (A) 50
- (B) 52
- (C) 54
- (D) 58

3

The function f is defined by $f(x) = x^2 + 24$. What is the value of $f(5)$?

- (A) 5
- (B) 24
- (C) 29
- (D) 49

2

Which expression is equivalent to $7x^2 + 8x$?

- (A) $x(7x + 8)$
- (B) $7x(x + 8)$
- (C) $8x(7x + 1)$
- (D) $x^2(7x + 8)$

4

Which expression is equivalent to

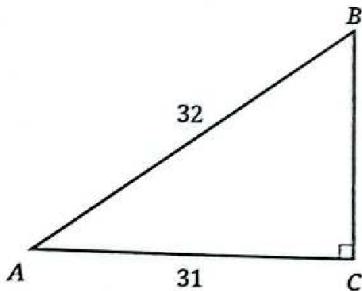
$$(x^3 + 3x^2 - 6x) + 4(x^2 + 6)$$

- (A) $x^3 + 7x^2 - 6x + 24$
- (B) $x^3 + 3x^2 - 6x + 24$
- (C) $x^3 + 4x^2 - 6x + 24$
- (D) $x^3 + 6x^2 - 6x + 24$

Section 2, Module 1: Math

OCTOBER 7, 2023 INT

5



Note: Figure not drawn to scale.

What is the value of $\cos A$ in the triangle shown?

- (A) $\frac{32}{31}$
- (B) $\frac{31}{32}$
- (C) $\frac{1}{32}$
- (D) $\frac{1}{31}$

6

Jasmin grows bean pods in her garden. This year, she harvested 490 bean pods and saved 10% of them to plant next year. How many of the harvested bean pods did Jasmin save to plant next year?

- (A) 39
- (B) 49
- (C) 57
- (D) 59

7

If $3x - 8 = 7$, what is the value of $3x + 8$?

- (A) -1
- (B) 5
- (C) 13
- (D) 23

8

$$y < x$$

$$x < 24$$

For which of the following tables are all the values of a and their corresponding values of y solutions to the given system of inequalities?

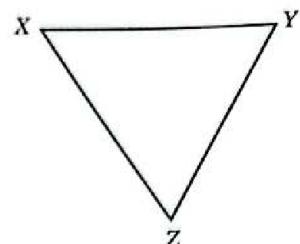
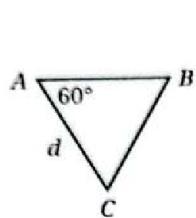
	x	y
A	21	20
	22	21
	23	22

	x	y
B	21	22
	22	23
	23	24

	x	y
C	21	24
	22	25
	23	26

	x	y
D	21	26
	22	27
	23	28

9



Note: Figures not drawn to scale.

For the triangles shown, triangle ABC is dilated by a scale factor of 3 to obtain triangle XYZ , where $d = 16$. What is the measure, in degrees, of angle X ?

(A) 20

(B) 57

(C) 60

(D) 63

Section 2, Module 1: Math

OCTOBER 7, 2023 INT

10

A box contains 23 red buttons and 27 blue buttons. If one of these buttons is selected at random, what is the probability of selecting a red button? (Express your answer as a decimal or fraction, not as a percent.)

12

The length of a side of square X is 9 centimeters. The area of rectangle Y is 24 square centimeters. What is the total area, in square centimeters, of square X and rectangle Y?

(A) 66

(B) 81

(C) 105

(D) 129

11

What is an x -coordinate of an x -intercept of the graph of $y = 4(x - 13)(x + 5)(x + 1)$ in the xy -plane?

13

Before liftoff, one of a space shuttle's solid rocket boosters contained 489,000 kilograms (kg) of propellant. Exactly 23 seconds after liftoff, 374,046 kg of this propellant remained. On average, how much propellant, in kg, did this solid rocket booster burn each second after liftoff?

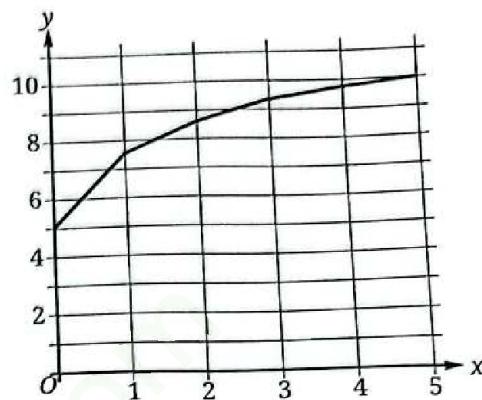
14

$$y = 0.25x^2 - 7.5x + 80.25$$

The equation gives the estimated stock price y , in dollars, for a certain company x days after the company went public, where $0 \leq x \leq 20$. Which statement is the best interpretation of $(x, y) = (1, 73)$ in this context?

- (A) The company's estimated stock price increased \$73 every day after the company went public.
- (B) The company's estimated stock price increased \$1 every 73 days after the company went public.
- (C) 1 day after the company went public, the company's estimated stock price is \$73.
- (D) 73 days after the company went public, the company's estimated stock price is \$1.

15



The graph gives the estimated population y , in thousands, of a town x years since 2001, where $0 \leq x \leq 5$. Which of the following best describes the increase in the estimated population from $x = 0$ to $x = 1$?

- (A) The estimated population at $x = 1$ is 0.5 times the estimated population at $x = 0$.
- (B) The estimated population at $x = 1$ is 1.5 times the estimated population at $x = 0$.
- (C) The estimated population at $x = 1$ is 2.5 times the estimated population at $x = 0$.
- (D) The estimated population at $x = 1$ is 3.5 times the estimated population at $x = 0$.

16

The population of City A increased by 9% from 2015 to 2016. If the 2016 population is k times the 2015 population, what is the value of k ?

- (A) 0.09
- (B) 0.9
- (C) 1.09
- (D) 1.9

17

Circle A in the xy -plane has the equation $(x + 8)^2 + (y - 8)^2 = 4$. Circle B has the same center as circle A. The radius of circle B is two times the radius of circle A. The equation defining circle B in the xy -plane is $(x + 8)^2 + (y - 8)^2 = k$, where k is a constant. What is the value of k ?

18

If a circuit consists of resistors connected in series, its resistance, in ohms, is equal to the sum of the resistances, in ohms, of all these resistors. A particular circuit consists of x identical resistors of type X and y identical resistors of type Y, which are connected in series. The resistance R , in ohms, of this circuit is given by the equation $R = 13x + 15$. Which of the following is the best interpretation of 13 in this context?

- (A) The total resistance of all resistors of type X in the circuit is 13 ohms.
- (B) The resistance of the circuit increases by 13 ohms with each addition of a resistor to the circuit.
- (C) The resistance of the circuit increases by $13x$ ohms with each addition of a resistor of type X to the circuit.
- (D) The resistance of the circuit increases by 13 ohms with each addition of a resistor of type Y to the circuit.

19

The function f is defined by $f(x) = 20x$. For what value of x is $f(x) = 140$?

21

The function g is defined as $g(x) = \frac{2x - 4}{(x + 13)(x - 5)}$, where a is a constant, what is the value of a ?

20

The ratio x to y is equivalent to the ratio 7 to 9. If $x = 10t$, what is the value of y in terms of t ?

(A) $\frac{7}{90}t$

(B) $\frac{9}{70}t$

(C) $\frac{70}{9}t$

(D) $\frac{90}{7}t$

22

The function g is defined by $g(x) = \frac{1}{m}x + 21$, where m is an integer constant and $14 \leq m \leq 17$. For the graph of $y = g(x) - 9$ in the xy -plane, what is the x -coordinate of a possible x -intercept?

Module 1 Reading and Writing		Module 2 Reading and Writing		Module 1: Math	
1	A	1	A	1	D
2	Missing	2	C	2	A
3	D	3	C	3	D
4	D	4	A	4	A
5	B	5	D	5	B
6	C	6	B	6	B
7	A	7	A	7	D
8	C	8	A	8	A
9	B	9	D	9	C
10	B	10	B	10	23/50
11	A	11	A	11	13 or -5 or -1
12	C	12	B	12	C
13	B	13	B	13	4998
14	A	14	Missing	14	C
15	D	15	Missing	15	B
16	A	16	D	16	C
17	B	17	A	17	16
18	A	18	A	18	D
19	D	19	C	19	7
20	C	20	B	20	C
21	A	21	D	21	
22	A	22	A	22	-168 or -180 or -192 or -204
23	B	23	D		
24	A	24	B		
25	D	25	A		
26	B	26	B		
27	A	27	D		