



DIGITAL SAT

MASTER CLASS

The Test

Digital SAT Tips

READING & WRITING PRACTICE



The following text is from Frances Hodgson Burnett's 1911 novel *The Secret Garden*. Mary, a young girl, is outside trying her new jump rope.

The sun was shining and a little wind was blowing—not a rough wind, but one which came in delightful little gusts and brought a fresh scent of newly turned earth with it. She skipped round the fountain garden, and up one walk and down another.



1



Mark for Review



As used in the text, what does the word “rough” most nearly mean?

A Harsh

B Scratchy

C Basic

D Vague

In the 1960s, Sam Gilliam, a Black painter from the southern United States, became the first artist to drape painted canvases into flowing shapes. He later explored a different style, _____ quilt-like paintings inspired by the patchwork quilting tradition of Black communities in the South.

2

Mark for Review



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

(A) predicting

(B) refusing

(C) hiding

(D) creating

While we can infer information about climate activity in Earth's distant past from physical evidence, we of course cannot observe past climates directly. To study early Earth's climate in action, we must _____ that climate using computer models that represent various climate conditions consistent with the physical evidence.

3



Mark for Review



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

(A) invent

(B) simulate

(C) exaggerate

(D) preserve

Although the playwrights hoped that their play would be _____ when performed live, critics generally agreed that the production and performances had the opposite effect, wearying audiences instead of energizing them.

4



Mark for Review



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

(A) multifaceted

(B) realistic

(C) rousing

(D) subtle



The following text is adapted from Charles Chesnutt's 1899 short story "Mars Jeems's Nightmare." The narrator and his wife have recently moved to the southern United States, and Julius is their carriage driver.

Julius [was] very useful when we moved to our new residence. He had a thorough knowledge of the neighborhood, was familiar with the roads and the watercourses, knew the qualities of the various soils and what they would produce, and where the best hunting and fishing were to be had. He was a marvelous hand in the management of horses and dogs.



5



Mark for Review



Which choice best states the main purpose of the text?

- A To compare the narrator's reaction to a new home with his wife's reaction
- B To give an example of Julius's knowledge about soil
- C To show that the narrator and Julius often hunt and fish together
- D To explain different ways in which Julius was helpful

By combining Indigenous and classical music, Cree composer and cellist Cris Derksen creates works that reflect the diverse cultural landscape of Canada. For her album *Orchestral Powwow*, Derksen composed new songs in the style of traditional powwow music that were accompanied by classical arrangements played by an orchestra. But where an orchestra would normally follow the directions of a conductor, the musicians on *Orchestral Powwow* are led by the beat of a powwow drum.

6

Mark for Review



Which choice best states the main purpose of the text?

- A** To examine how Derksen’s musical compositions blend cultures
- B** To argue that Derksen should be recognized for creating a new style of music
- C** To describe the difficulties Derksen encountered when producing her album
- D** To establish a contrast between Derksen’s classical training and her Cree heritage



“How lifelike are they?” Many computer animators prioritize this question as they strive to create ever more realistic environments and lighting. Generally, while characters in computer-animated films appear highly exaggerated, environments and lighting are carefully engineered to mimic reality. But some animators, such as Pixar’s Sanjay Patel, are focused on a different question. Rather than asking first whether the environments and lighting they’re creating are convincingly lifelike, Patel and others are asking whether these elements reflect their films’ unique stories.



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Mark for Review



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


- (A) It reflects a primary goal that many computer animators have for certain components of the animations they produce.
- (B) It represents a concern of computer animators who are more interested in creating unique backgrounds and lighting effects than realistic ones.
- (C) It conveys the uncertainty among many computer animators about how to create realistic animations using current technology.
- (D) It illustrates a reaction that audiences typically have to the appearance of characters created by computer animators.



Paleontologist Lucas E. Fiorelli and colleagues have reported the discovery at a mine in Brazil of several egg clutches, partially preserved single eggs, and egg shells from the Late Cretaceous period. The researchers have concluded that the area was once a nesting and breeding site for titanosaurs, a group of sauropod dinosaurs. The finding is significant given the previous lack of known nesting sites in northern regions of South America, which led many paleontologists to assume that titanosaurs migrated south to lay eggs.




8

 Mark for Review



What does the text most strongly suggest about the site discovered by the researchers?


- (A) It is the earliest known example of a titanosaur nesting and breeding site.
- (B) It was very difficult to excavate given that it was discovered in a mine.
- (C) It may have been occupied by other sauropods in addition to titanosaurs.
- (D) It is farther north than any other nesting site discovered in South America.



In superfluorescence, electrical charges known as dipoles emit light in synchronized bursts so intense that they are visible to the eye. Until recently, this phenomenon has only been observed at extremely cold temperatures because dipoles cannot synchronize at higher temperatures. But in a study, Melike Biliroglu and colleagues observed superfluorescence at room temperature in thin films made of perovskite and other similarly crystalline materials; the researchers propose that the formation of shock-absorbing quasiparticles called polarons in the material protects dipoles from thermal interference.



9

 Mark for Review



Based on the text, how are polarons believed to be involved in the superfluorescence observed in Biliroglu and colleagues' study?

- (A)** Polarons enable superfluorescent bursts to cross from one crystalline material to another.
- (B)** Polarons allow for the dipoles to synchronize despite higher temperatures.
- (C)** Polarons accelerate the dipoles' release of superfluorescent bursts.
- (D)** Polarons decrease the intensity of the superfluorescent burst.

Number and Origin of Clamshell Tools Found at Different Depths below the Surface in Neanderthal Cave

Depth of tools found below surface in cave (meters)	Clamshells that Neanderthals collected from the beach	Clamshells that Neanderthals harvested from the seafloor
2–3	7	0
3–4	99	33
4–5	2	0
5–6	18	7
6–7	1	0

Two kinds of clamshell tools used by Neanderthals were dug up in a cave on the western coast of Italy. Archaeologist Paola Villa and her colleagues studied the tools and determined that Neanderthals either collected clams that had washed onto the beach or harvested clams from the seafloor and then sharpened the shells to make tools. The highest number of tools made from clamshells that were collected from the beach was found at a depth of _____

10

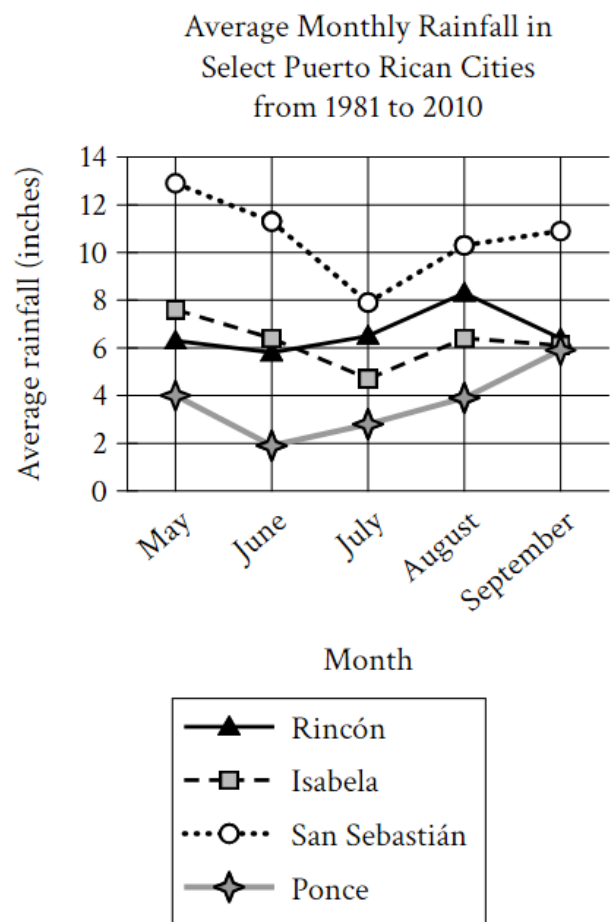


Mark for Review



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

- (A) 5–6 meters below the surface.
- (B) 4–5 meters below the surface.
- (C) 3–4 meters below the surface.
- (D) 6–7 meters below the surface.



A student is presenting average monthly rainfall totals in various Puerto Rican cities for a science class. During the presentation, the student notes that in September _____

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Mark for Review

ABC

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

- (A) Rincón's average rainfall is greater than that of Isabela, San Sebastián, and Ponce.
- (B) Rincón and Ponce have an average rainfall of about 5 inches, and Isabela and San Sebastián have an average rainfall of about 10 inches.
- (C) Rincón, Ponce, and Isabela each have an average rainfall below 8 inches, but San Sebastián's average rainfall that month is greater than 8 inches.
- (D) Rincón has a similar average rainfall to Isabela, and Ponce has a similar average rainfall to San Sebastián.

Accomplished printmaker and sculptor Elizabeth Catlett (1915–2012) used her art to explore the Black experience in the United States. In a paper for an art history class, a student claims that Catlett had a particular talent for unifying various artistic traditions and styles in her work.



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Mark for Review



Which quotation from a scholar describing Catlett’s work would best support the student’s claim?

- (A) “In *Mother and Child*, a sculpture of two Black figures, Catlett used an ancient Indigenous sculpting technique and combined the visual aesthetic of modern Mexican muralists with that of German artist Kathe Kollwitz.”
- (B) “In her collage *New Generation*, Catlett overlaid fabric onto the canvas to represent the clothing of a father and his toddler, positioned to evoke classic images of a mother and child.”
- (C) “Created in 1968, Catlett’s sculpture *Black Unity*, a stylized fist sculpted from mahogany and measuring two feet across, remains an important piece and has received renewed and well-deserved attention in recent years.”
- (D) “One series of Catlett’s prints, made by the artist using the linoleum cut method, depicts several notable African American women, including Harriet Tubman and Sojourner Truth.”

E-book Sales as a Percentage of Total Unit Sales
in All Book Formats for a Large US Trade
Publisher, by Genre, 2006, 2011, 2016

Genre	2006	2011	2016
science fiction and fantasy	0.6	27.7	36.7
cookbooks	0	2.9	10.5
travel guides	0	5.5	24.6
romance	0.3	40.6	56.2

E-books became an increasingly popular means of reading in the United States in the 2000s and 2010s, though that popularity was concentrated in titles that, like those in most fiction genres, are meant to be read straight through from beginning to end. For books in nonfiction genres that do not tell stories and require the reader to flip back and forth through a volume, e-books were significantly less commercially successful. This can be seen by comparing _____



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Mark for Review



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

- (A) the percentage of 2016 cookbook sales that were e-books with the percentage of 2016 science fiction and fantasy sales that were e-books.
- (B) the percentage of 2006 romance sales that were e-books with the percentage of 2016 romance sales that were e-books.
- (C) the percentage of 2006 romance sales that were e-books with the 2006 science fiction and fantasy sales that were e-books.
- (D) the percentage of 2011 travel guide sales that were e-books with the percentage of 2016 travel guide sales that were e-books.



Colonized by Spain in the 1600s, New Mexico is home to a dialect of Spanish that differs significantly from dialects spoken in Spain's other former colonies in the Americas. Most notably, the New Mexican dialect retains older features of the language that other dialects lost in later centuries. But why would it have done so? New Mexico was so distant from population centers in Spain's other colonies that it attracted few colonists after its initial colonization. Geographical isolation in turn would have limited the exposure of New Mexican colonists to changes occurring to Spanish grammar and vocabulary elsewhere in the empire. Thus, the present-day uniqueness of the New Mexican dialect suggests the extent to which _____



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Mark for Review



Which choice most logically completes the text?

- (A) a language can protect itself from being influenced by other languages.
- (B) the grammar and vocabulary of any given language change from one generation to the next.
- (C) geographical isolation can influence how a language develops.
- (D) speakers of one dialect of a language can understand speakers of another dialect of that language.

Violins made by Antonio Stradivari and other craftspeople in the sixteenth to eighteenth centuries in Cremona, Italy, produce a sound that is considered superior to that of modern stringed instruments. Some experts have claimed that the type of wood used to create Cremonese violins is responsible for their prized sound, but modern and Cremonese violins are made of the same kinds of wood: maple and spruce. New analysis, however, has revealed unique indications that the wood in the older violins was chemically treated by the makers, leading researchers to suggest that _____



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Mark for Review



Which choice most logically completes the text?

- (A) Cremonese violins probably were not considered superior to other instruments at the time they were made.
- (B) the sound quality of Cremonese violins results in part from a method the craftspeople used to alter the wood.
- (C) if modern violins were made of a wood other than maple or spruce, they likely would sound as good as Cremonese violins.
- (D) the current process of making violins is the same process that was used centuries ago by Cremonese craftspeople.

In 1903, environmentalist John Muir guided President Theodore Roosevelt on a scenic, sprawling trip through California's Yosemite Valley. Upon returning from the three-day excursion, Roosevelt _____ to conserve the nation's wilderness areas, a vow he upheld for his remaining six years in office.



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Mark for Review



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

(A) is vowing

(B) vowed

(C) will vow

(D) vows



In the early twentieth century, Joseph Kekuku and other Hawaiian _____ in the mainland United States to the bright and lilting sound of the *kīkā kila*, or Hawaiian steel guitar. The instrument soon became a fixture in American blues and country music.



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Mark for Review



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

- (A) musicians introduced audiences
- (B) musicians' introduced audiences'
- (C) musician's introduced audience's
- (D) musicians' introduced audiences

Award-winning cinematographer James Wong Howe was known for his innovative filming techniques. While filming a boxing match for the movie *Body and Soul* _____ Howe had a handheld camera operator wear roller skates. This allowed the operator to move smoothly around actors in a boxing ring, creating an immersive experience for viewers.



18



Mark for Review



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

(A) (1947), and

(B) (1947),

(C) (1947) and

(D) (1947)



At eight paragraphs long, the preamble to the constitution of _____ country in Western Asia—is much longer than the one-paragraph preamble to the United States Constitution.



19



Mark for Review



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

(A) Bahrain—a

(B) Bahrain, a

(C) Bahrain a

(D) Bahrain: a



On April 5, 1977, Kitty Cone and 150 other disability rights activists entered a San Francisco federal building. After pleading for years—to no effect—for the passage of key antidiscrimination legislation, _____ until their demands were addressed. Finally, on April 28, the legislation was signed.



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Mark for Review



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

- (A) pressure on lawmakers increased when the activists staged a sit-in protest
- (B) a sit-in protest staged by the activists increased pressure on lawmakers
- (C) lawmakers came under increased pressure when the activists staged a sit-in protest
- (D) the activists increased pressure on lawmakers by staging a sit-in protest

After immigrating from Mexico and obtaining U.S. citizenship, Octaviano Ambrosio Larrazolo entered politics, earning a reputation for being a fervent defender of Hispanic civil rights. In 1919 Larrazolo was elected governor of _____. In 1928 he became the nation's first Hispanic U.S. Senator.



21



Mark for Review



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

(A) New Mexico and

(B) New Mexico,

(C) New Mexico, and

(D) New Mexico



By 1936, Spanish Romani dancer Carmen Amaya was known all over Spain for her powerful style of flamenco dancing. However, in July of that year, the outbreak of the Spanish Civil War made it difficult for her to perform in her home country. _____ Amaya left Spain to perform abroad, dancing for audiences across North and South America.



22



Mark for Review



Which choice completes the text with the most logical transition?

(A) In comparison,

(B) As a result,

(C) First of all,

(D) For example,

Phytoplankton play a crucial role in the ocean's uptake of carbon from the atmosphere. When alive, these tiny marine organisms absorb atmospheric carbon via photosynthesis. _____ after they die, the phytoplankton sink to the seafloor, where the carbon in their cells gets stored in sediment, preventing it from cycling back into the atmosphere.



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Mark for Review



Which choice completes the text with the most logical transition?

(A) Specifically,

(B) By contrast,

(C) Nevertheless,

(D) Then,

The envelope-shaped paper bags common in the US 150 years ago were impractical for carrying goods. _____ because they were the only paper bags that could be mass-produced, these bags dominated the market. That all changed in the 1870s, when industrial designer Margaret Knight patented a machine to make flat-bottomed, foldable paper bags.



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Mark for Review



Which choice completes the text with the most logical transition?

(A) However,

(B) For instance,

(C) Thus,

(D) In other words,



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

- Roughly 96% of Australia's estimated 200,000 animal species are invertebrates.
- Invertebrates of the order Hymenoptera, which consists of sawflies, wasps, bees, and ants, are estimated to total 14,800 species in Australia.
- Invertebrates of the order Coleoptera, which consists of beetles and weevils, are estimated to total 28,200 species in Australia.
- Some of these invertebrates' populations are threatened by invasive bird and fish species.



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Mark for Review



The student wants to emphasize the different orders in which Australia's invertebrate animals are classified. Which choice most effectively uses relevant information from the notes to accomplish this goal?

- (A) In Australia, 28,200 species are estimated to be beetles and weevils, both classified as invertebrates of the order Coleoptera.
- (B) Among Australia's many invertebrates, sawflies, wasps, bees, and ants belong to the order Hymenoptera, while beetles and weevils belong to the order Coleoptera.
- (C) Many sawflies, wasps, bees, and ants of the order Hymenoptera are threatened by some of Australia's invasive bird and fish species.
- (D) The order Hymenoptera is estimated to make up 14,800 of Australia's 200,000 animal species.



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

- *The Heartbeat of Wounded Knee: Native America from 1890 to the Present* is a history book by Ojibwe author David Treuer.
- In a review, a critic for *The Economist* noted that “Treuer’s storytelling skills shine” and that the book is an “elegant handling of [a] complex narrative.”
- A critic for *O, The Oprah Magazine* called it “a marvel of research and storytelling.”
- A critic for the *Missoulian* dubbed it “a monumental achievement.”

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Mark for Review



The student wants to emphasize a similarity in how critics responded to Treuer’s book. Which choice most effectively uses relevant information from the notes to accomplish this goal?

- (A) Treuer’s book, which was widely reviewed, focuses on Native American history from 1890 to the present.
- (B) Dubbed “a monumental achievement” by the *Missoulian*, Treuer’s book documents over a century of Native American history.
- (C) Critics praised Treuer’s book for its compelling narrative, with *O, The Oprah Magazine* calling it “a marvel of research and storytelling” and *The Economist* likewise writing that “Treuer’s storytelling skills shine” and that the book is an “elegant handling of [a] complex narrative.”
- (D) While the *Missoulian* focused on the book’s broader achievement, *The Economist* zeroed in on Treuer’s storytelling skills.



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

- Cities tend to have a wide range of flowering vegetation in parks, yards, and gardens.
- This vegetation provides a varied diet for honeybees, strengthening bees' immune systems.
- On average, 62.5 percent of bees in an urban area will survive a harsh winter.
- Rural areas are often dominated by monoculture crops such as corn or wheat.
- On average, only 40 percent of honeybees in a rural area will survive a harsh winter.

27



Mark for Review



The student wants to make and support a generalization about honeybees. Which choice most effectively uses relevant information from the notes to accomplish this goal?

- (A) Cities tend to have a wider range of flowering vegetation than do rural areas, which are often dominated by monoculture crops.
- (B) In urban areas, over 60 percent of honeybees, on average, will survive a harsh winter, whereas in rural areas, only 40 percent will.
- (C) The strength of honeybees' immune systems depends on what the bees eat, and a varied diet is more available to bees in an urban area than to those in a rural area.
- (D) Honeybees are more likely to thrive in cities than in rural areas because the varied diet available in urban areas strengthens the bees' immune systems.



DIGITAL SAT

FREE

MINI INTENSIVE

COURSE

WHO ARE WE

**SAT & ACT
PREP
SINCE 2003**

**RALEIGH
NORTH
CAROLINA**

**LIVE
ONLINE
WORLDWIDE**

**7000
STUDENTS
TAUGHT**

**10
DIFFERENT
COUNTRIES**

**125,000
FOLLOWERS
ONLINE**

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MATH

Digital SAT Revision

1.

The expression $6\sqrt[5]{3^5x^{45}} \cdot \sqrt[8]{2^8x}$ is equivalent to ax^b ,

where a and b are positive constants and $x > 1$.

What is the value of $a + b$?

2.

The number a is 110% greater than the number b .

The number b is 90% less than 47. What is the value of a ?

3.

Which expression is equivalent to $a^{\frac{11}{12}}$,

where $a > 0$?

A) $\sqrt[12]{a^{132}}$

B) $\sqrt[144]{a^{132}}$

C) $\sqrt[121]{a^{132}}$

D) $\sqrt[11]{a^{132}}$

4.

210 is $p\%$ greater than 30. What is the value of p ?

5.

A certain town has an area of 4.36 square miles.
What is the area, in square yards, of this town?
(1 mile = 1,760 yards)

- A) 404
- B) 7,674
- C) 710,459
- D) 13,505,536

6.

A sample of oak has a density of 807 kilograms per cubic meter. The sample is in the shape of a cube, where each edge has a length of 0.90 meters. To the nearest whole number, what is the mass, in kilograms, of this sample?

- A) 588
- B) 726
- C) 897
- D) 1,107

7.

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

8.

For a certain rectangular region, the ratio of its length to its width is 35 to 10. If the width of the rectangular region increases by 7 units, how must the length change to maintain this ratio?

- A) It must decrease by 24.5 units.
- B) It must increase by 24.5 units.
- C) It must decrease by 7 units.
- D) It must increase by 7 units.

9.

Which expression is equivalent to $6x^8y^2 + 12x^2y^2$?

- A) $6x^2y^2(2x^6)$
- B) $6x^2y^2(x^4)$
- C) $6x^2y^2(x^6 + 2)$
- D) $6x^2y^2(x^4 + 2)$

10.

Which expression is equivalent to

$$\frac{8x(x-7) - 3(x-7)}{2x-14}, \text{ where } x > 7 ?$$

- A) $\frac{x-7}{5}$
- B) $\frac{8x-3}{2}$
- C) $\frac{8x^2-3x-14}{2x-14}$
- D) $\frac{8x^2-3x-77}{2x-14}$

11.

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

What is the positive solution to the given equation?

12.

Which expression is equivalent

to $\frac{y+12}{x-8} + \frac{y(x-8)}{x^2y-8xy}$?

A) $\frac{xy+y+4}{x^3y-16x^2y+64xy}$

B) $\frac{xy+9y+12}{x^2y-8xy+x-8}$

C) $\frac{xy^2+13xy-8y}{x^2y-8xy}$

D) $\frac{xy^2+13xy-8y}{x^3y-16x^2y+64xy}$

13.

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 ?

14.

$$-9x^2 + 30x + c = 0$$

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

- A) 3
- B) 0
- C) -25
- D) -53

15.

$$-3x + 21px = 84$$

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

A) 0

B) $\frac{1}{7}$

C) $\frac{4}{3}$

D) 4

16.

$$5x^2 + 10x + 16 = 0$$

How many distinct real solutions does the given equation have?

A) Exactly one

B) Exactly two

C) Infinitely many

D) Zero

17.

$$6x + 7y = 28$$

$$2x + 2y = 10$$

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

18.

The function f is defined by the equation

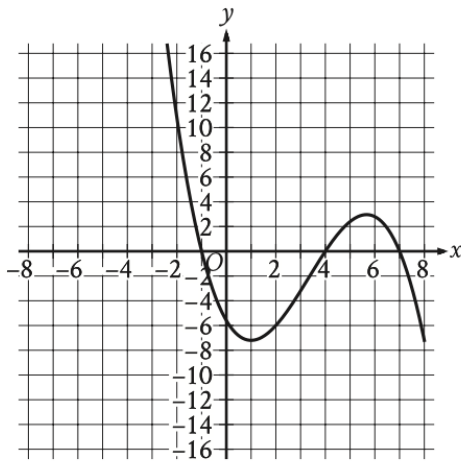
$f(x) = 7x + 2$. What is the value of $f(x)$ when $x = 4$?

19.

The function p is defined by $p(n) = 7n^3$. What is the value of n when $p(n)$ is equal to 56?

- A) 2
- B) $\frac{8}{3}$
- C) 7
- D) 8

20.



The graph of $y = f(x)$ is shown, where the function f is defined by $f(x) = ax^3 + bx^2 + cx + d$ and a , b , c , and d are constants. For how many values of x does $f(x) = 0$?

- A) One
- B) Two
- C) Three
- D) Four

21.

The function f is defined by $f(x) = 7x^3$. In the xy -plane, the graph of $y = g(x)$ is the result of shifting the graph of $y = f(x)$ down 2 units. Which equation defines function g ?

- A) $g(x) = \frac{7}{2}x^3$
- B) $g(x) = 7x^{\frac{3}{2}}$
- C) $g(x) = 7x^3 + 2$
- D) $g(x) = 7x^3 - 2$

22.

$$f(x) = (x + 6)(x + 5)(x - 4)$$

The function f is given. Which table of values represents $y = f(x) - 3$?

A)

x	y
-6	-9
-5	-8
4	1

B)

x	y
-6	-3
-5	-3
4	-3

C)

x	y
-6	-3
-5	-2
4	7

D)

x	y
-6	3
-5	3
4	3

23.

The function f is defined by

$f(x) = (x - 6)(x - 2)(x + 6)$. In the xy -plane, the graph of $y = g(x)$ is the result of translating the graph of $y = f(x)$ up 4 units. What is the value of $g(0)$?

24.

The function f is defined by $f(x) = \frac{1}{10}x - 2$. What is the y -intercept of the graph of $y = f(x)$ in the xy -plane?

A) $(-2, 0)$

B) $(0, -2)$

C) $\left(0, \frac{1}{10}\right)$

D) $\left(\frac{1}{10}, 0\right)$

25.

Line p is defined by $2y + 18x = 9$. Line r is perpendicular to line p in the xy -plane. What is the slope of line r ?

- A) -9
- B) $-\frac{1}{9}$
- C) $\frac{1}{9}$
- D) 9

26.

$$5x + 7y = 1$$

$$ax + by = 1$$

In the given pair of equations, a and b are constants. The graph of this pair of equations in the xy -plane is a pair of perpendicular lines. Which of the following pairs of equations also represents a pair of perpendicular lines?

- A) $10x + 7y = 1$
 $ax - 2by = 1$
- B) $10x + 7y = 1$
 $ax + 2by = 1$
- C) $10x + 7y = 1$
 $2ax + by = 1$
- D) $5x - 7y = 1$
 $ax + by = 1$

27.

The graph of $9x - 10y = 19$ is translated down 4 units in the xy -plane. What is the x -coordinate of the x -intercept of the resulting graph?

28.

Line t in the xy -plane has a slope of $-\frac{1}{3}$ and passes through the point $(9, 10)$. Which equation defines line t ?

A) $y = 13x - \frac{1}{3}$

B) $y = 9x + 10$

C) $y = -\frac{x}{3} + 10$

D) $y = -\frac{x}{3} + 13$