Name: _____ School: _____

Refer to the scoring chart at the reverse side.

Reading & Writing /800		Math /800	
Module 1 32 min	**Module 2 32 min**	**Module 1 37 min**	**Module 2 37 min**
Raw score:	Raw score:	Raw score:	Raw score:
1.	1.	1.	1.
2.	2.	2.	2.
3.	3.	3.	3.
4.	4.	4.	4.
5.	5.	5.	5.
6.	6.	6.	6.
7.	7.	7.	7.
8.	8.	8.	8.
9.	9.	9.	9.
10.	10.	10.	10.
11.	11.	11.	11.
12.	12.	12.	12.
13.	13.	13.	13.
14.	14.	14.	14.
15.	15.	15.	15.
16.	16.	16.	16.
17.	17.	17.	17.
18.	18.	18.	18.
19.	19.	19.	19.
20.	20.	20.	20.
21.	21.	21.	21.
22.	22.	22.	22.
23.	23.		
24.	24.		
25.	25.		
26.	26.		
27.	27.		

Uniform Scoring Chart (To be curved)

English   M1 Raw Score

M2 Raw Score	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11
27	80	78	77	75	73	71	70	68	66	65	63	61	60	58	57	56	55
26	79	77	76	74	72	70	69	67	65	64	62	60	59	57	56	55	54
25	77	75	74	72	70	68	67	65	63	62	60	58	57	55	54	53	52
24	76	74	73	71	69	67	66	64	62	61	59	57	56	54	53	52	51
23	75	73	72	70	68	66	65	63	61	60	58	56	55	53	52	51	50
22	74	72	71	69	67	65	64	62	60	59	57	55	54	52	51	50	49
21	72	70	69	67	65	63	62	60	58	57	55	53	52	50	49	48	47
20	70	68	67	65	63	61	60	58	56	55	53	51	50	48	47	46	45
19	69	67	66	64	62	60	59	57	55	54	52	50	49	47	46	45	44
18	68	66	65	63	61	59	58	56	54	53	51	49	48	46	45	44	43
17	67	65	64	62	60	58	57	55	53	52	50	48	47	45	44	43	42
16	66	64	63	61	59	57	56	54	52	51	49	47	46	44	43	42	41
15	65	63	62	60	58	56	55	53	51	50	48	46	45	43	42	41	40
14	64	62	61	59	57	55	54	52	50	49	47	45	44	42	41	40	39
13	63	61	60	58	56	54	53	51	49	48	46	44	43	41	40	39	38
12	62	60	59	57	55	53	52	50	48	47	45	43	42	40	39	38	37
11	61	59	58	56	54	52	51	49	47	46	44	42	41	39	38	37	36

Math   M1 Raw Score

M2 Raw Score	22	21	20	19	18	17	16	15	14	13	12	11
22	80	78	76	74	72	69	67	65	63	61	59	57
21	79	77	75	73	71	68	66	64	62	60	58	56
20	77	75	73	71	69	66	64	62	60	58	56	54
19	76	74	72	70	68	65	63	61	59	57	55	53
18	74	72	70	68	66	63	61	59	57	55	53	51
17	73	71	69	67	65	62	60	58	56	54	52	50
16	71	69	67	65	63	60	58	56	54	52	50	48
15	70	68	66	64	62	59	57	55	53	51	49	47
14	68	66	64	62	60	57	55	53	51	49	47	45
13	67	65	63	61	59	56	54	52	50	48	46	44
12	66	64	62	60	58	55	53	51	49	47	45	43
11	65	63	61	59	57	54	52	50	48	46	44	42

Reading and Writing Test

27 QUESTIONS | 32 MINUTES

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

The researchers compiled data on side effects from 163 patients with major depressive disorder or bipolar disorder and 25 healthy controls who participated in one of five placebo-controlled clinical trials conducted at the NIH Clinical Center over 13 years. The study did not address the side effects associated with repeated infusions or long-term use.

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

A) authorities

B) restraints

C) benchmarks

D) commands

2

A large percentage of the organisms in the world are parasitic, meaning they derive nutrients from another species, but almost none of them are mammalian. One notable _____ is the vampire bat, which feeds on the blood of cows and other mammals.

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

A) peculiarity

B) exception

C) distortion

D) idiosyncrasy

3

Salt stress, too much salt in the soil for plants to thrive, is one of the major environmental constraints limiting agricultural productivity and influencing the _____ of bioactive compounds of vegetables. In this study, we assessed the effect of NaCl salt stress on flowering, fructification, and fruit nutritional quality of a local cultivar of chili pepper.

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

A) attentiveness

B) dedication

C) concentration

D) centralization

4

How HEPHL1 mechanistically regulates hair growth and development will require in–depth analysis, and the curly whiskers from *HEPHL1* knockout mice could help these investigations. Our preliminary results showed that HEPHL1 regulates the activity of an enzyme, lysyl oxidase, which needs copper for its enzymatic activity. This raises the intriguing possibility that, in addition to playing an iron–related role, HEPHL1 could relate to the copper absorption associated with Menkes disease and its associated hair abnormalities. In conclusion, our study identified HEPHL1 as a novel gene responsible for hair abnormalities and highlights the importance of exploring the role of HEPHL1—and its interconnections with other key regulators—in developing new therapeutic strategies to treat hair disorders and even more insidious genetic diseases.

What is the role of the second sentence in the overall structure of the text?

A) It establishes a potential link between HEPHL1 and the lack of proper copper absorption found in patients with Menkes disease.

B) It explains why patients with hair abnormalities may actually have a condition called Menkes disease.

C) It points out that there is a connection between iron intake and copper intake and an imbalance could cause Menkes disease.

D) It elaborates on the claim that mice are the best source of data about hair growth and development related to Menkes disease.

5

In general, deep ocean habitats may be negatively affected by tidal current energy systems due to the change of water flows, materials on the ocean floor, and movement of sediment. Potential other effects include mortality of fish passing through turbines (blade–strike) and the collision risk of marine mammals with tidal stream farms. A study showed that change in sediment patterns will most likely follow the installation of tidal arrays, impacting the local underwater habitat, and in turn, animal and plant species. However, in their review, Frid et al. conclude that "there is little scientific literature to suggest that operation of underwater tidal energy devices will cause elevated levels of mortality to organisms such as fish and marine mammals." Also, Lewis et al. mention that, "while current technologies have moving parts that may harm marine life, there is no evidence to date of harm from tidal current devices to marine life."

What is the main function of the quotes from Frid et al. and Lewis et al. in the overall structure of the text?

A) They show reputable scientists that hold very different views from each other.

B) They provide authoritative viewpoints that oppose that of the author.

C) They undermine conclusions which emphasize safety of tidal energy systems.

D) They introduce expert opinions that reinforce the authors' primary claim.

6

Extraterrestrial life, that familiar science–fiction trope, that kitschy fantasy, that CGI nightmare, has become a matter of serious discussion, a "risk factor," a "scenario." How has ET gone from sci–fi fairytale to a serious scientific endeavor modeled by macroeconomists, funded by fiscal conservatives, and discussed by theologians? Because, following a string of remarkable discoveries over the past two decades, the idea of alien life is not as far–fetched as it used to seem. Discovery now seems inevitable and possibly imminent.

In the text, what is the primary function of the phrases "science–fiction trope," "kitschy fantasy," and "CGI nightmare"?

A) To point out the ever–changing image of how extraterrestrial creatures appear

B) To encourage readers to imagine the possible variety of extraterrestrial life

C) To interject a lighthearted note into an otherwise serious passage

D) To emphasize that there is credibility in something that once was believed impossible

7

Text 1

A 1979 paper by father–and–son team Luis and William Alvarez identified their discovery of unusual quantities of a rare element called iridium in a layer of sediment about 65 million years ago. They contended that the iridium was indicative of a massive meteor impact that sent clouds of dust into the atmosphere, cooling the Earth enough to trigger the mass extinction of the dinosaurs at the end of the Cretaceous period.

Text 2

Though dramatic, the idea of a meteor strike wiping out the dinosaurs is far–fetched, say modern paleontologists. They agree a strike occurred but claim that there was actually no simultaneous or instantaneous event that could be classified as a mass extinction. Instead, species slowly died out over millions of years, with the last major representatives living to approximately the end of the Cretaceous period.

Based on the texts, which choice would the authors of the text most likely agree about?

A) A massive meteorite impact occurred, though it may not have caused a mass extinction.

B) Though the earth cooled due to a meteor impact, it was not enough to kill the dinosaurs.

C) There was actually no mass extinction of dinosaurs, though eventually they all died.

D) Most dinosaur species died prior to the period after the Cretaceous period.

8

The following text is adapted from Mother Jones's 1912 speech to coal miners picketing in Charlestown, West Virginia.

I want to show you here that the average wages you fellows get in this country is $500 a year. Before you get a thing to eat there is $20 taken out a month, which leaves about $24 a month. Then you go to the "pluck–me" stores (operated by the mine) and want to get something to eat for your wife, and the child comes back and says, "Papa, I can't get anything."

"Why," he says, "there is $24 coming to me?"

The child says, "They said there was nothing coming to you." And the child goes back crying without a mouthful of anything to eat. The father goes to the "pluck–me" store and says to the manager, "there is $24 coming to me," and the manager says, "Oh, no, we have kept $26 for rent."

According to the passage, what is true about the wages of the mine workers?

A) They are lower than the income of mine workers around the country.

B) They are periodically being reduced without explanation.

C) They are not consistent with the minimum wages of other jobs.

D) They are insufficient because of the policies of the mine owners.

9

The *GRL* paper focuses on one region of the Southern Ocean extending from the tip of South America to the tip of the Antarctic Peninsula. "The Drake Passage is the windiest, roughest part of the Southern Ocean," says Colm Sweeney, lead investigator on the Drake Passage study and co–author on the GRL paper, "The critical element to this study is that we were able to sustain measurements in this harsh environment as long as we have—both in the summer and the winter, in every year over the last 13 years. This data set of ocean carbon measurements is the densest ongoing time series in the Southern Ocean." The team was able to take these long–term measurements by piggybacking instruments on the Antarctic Research Supply Vessel *Laurence M. Gould,* which makes nearly 20 crossings of the Drake Passage each year, transporting people and supplies to and from Antarctic research stations.

According to the text, why are the results of the Drake Passage study unique?

A) They used more complete measurements than any other study of the region.

B) They were derived using equipment that had not previously been used.

C) They incorporated chemical measurements as well as other forms of data.

D) It was the first study to focus only on the Southern Ocean.

10

Emily Dickenson's poems were edited by her friends before publication to match the tastes of the times. Her personal style still shines through, as in the way she personifies books in her poem "In a Library": _____

Which quote from "In a Library" most effectively illustrates the claim?

A) "A precious, mouldering pleasure 't is / To meet an antique book, / In just the dress his century wore;"

B) "What interested scholars most, / What competitions ran / When Plato was a certainty."

C) "When Sappho was a living girl, / And Beatrice wore / The gown that Dante deified."

D) "Facts, centuries before, / He traverses familiar, / As one should come to town"

11

If we manage to separate out a clean signal from a planet outside our solar system and find some features in the light spectrum that might be indicative of life, we will need to work hard to think of any non–biological process that might account for them. "Life is the hypothesis of last resort," noted astronomer Carl Sagan. This requires some understanding of what processes might operate on worlds that we will know relatively little about; what we find on Earth can serve as a guide but also has potential to lead us astray.

Which hypothetical situation is Carl Sagan most likely warning to avoid in his quote?

A) A rover that was sent to Mars discovers a bacteria–like organism when it drills deep into the core of the planet.

B) An astronomer realizes that the atmosphere of a planet is too hot to sustain life even though it has oxygen.

C) A scientist finds a planet with a large amount of oxygen in its atmosphere so claims that the oxygen is produced by living creatures.

D) A new telescope finds a new planet orbiting a star that was previously believed to have no planets.

12

Percentage of Registered Nurses by Field
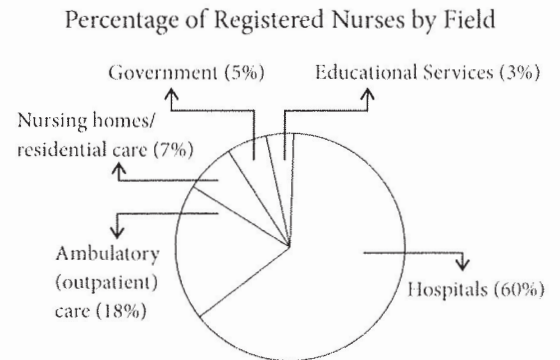
Data from US Bureau of Labor Statistics, June, 2021

Nursing is one of the fields in most demand, with an anticipated annual growth rate of 7 percent through 2029. Although some nurses work only in hospitals, there are actually many options, especially as the population ages and nurses are needed to tend to the daily needs of seniors. For example, _____

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

A) educational services employed about 3 percent of the registered nurses in 2021.

B) fewer registered nurses worked for the government than in ambulatory care.

C) the percentage of registered nurses working in nursing homes increased by 7 percent in 2021.

D) about 7 percent of registered nurses in 2021 worked in nursing or residential homes.

13

Engineering and Computer Science Stereotypes
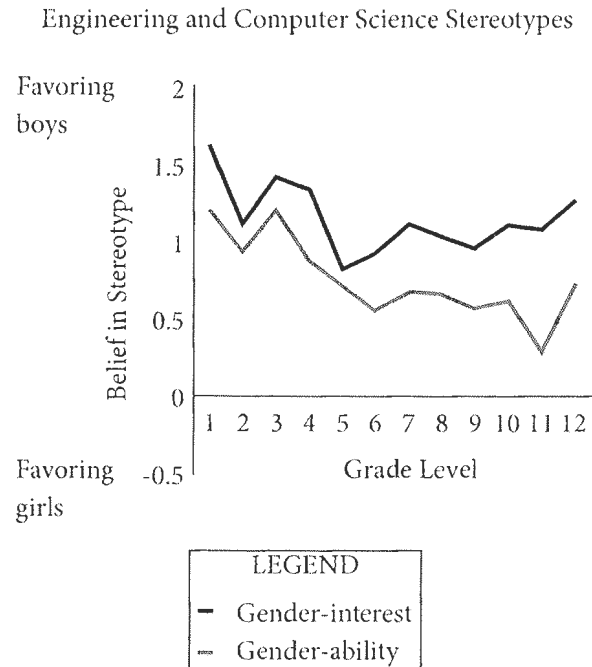
"Scientists ran an experiment where they found that a diverse set of students believed gender-interest stereotypes favoring boys in computer science and engineering. Students developed these stereotypes at a very young age. They also found that: Gender-interest stereotypes were stronger than gender-ability stereotypes. Girls who believed the stereotypes were _____. "

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

A) less skilled than interested in computer science and engineering.

B) equally skilled and interested in computer science and engineering.

C) less interested in participating in computer science and engineering.

D) more interested in participating in computer science and engineering.

14

The following text is adapted from Jefferson Keel's 2011 statement, "The Indian Reorganization Act—75 Years Later: Renewing our Commitment to Restore Tribal Homelands and Promote Self–determination."

Two years ago, our shared vision and the Federal responsibility to Indian tribes were threatened by the Supreme Court's interpretation of the IRA in *Carcieri v. Salazar*. There are at least 14 pending cases where tribes and the Secretary of Interior are under challenge. There are many more tribes whose land–to–trust applications have simply been frozen while the Department of Interior works through painstaking legal and historical analysis. We are seeing harassment litigation against tribes who were on treaty reservations in 1934 with a BIA superintendent. Land acquisitions are delayed. Lending and credit are drying up. Jobs are lost or never created. We fear that this will continue to get worse until Congress acts. Even worse, this decision will create two classes of Indian tribes: those who will benefit from Federal trust responsibility and those who will not.

According to the text, why is the Carcieri decision especially problematic?

A) It did not adhere to the exact wording of the original 1934 legislation.

B) It asserted that the 1934 legislation only applies to specific Native Americans.

C) It created new methods by which the Native Americans could regain lands.

D) It set precedents that facilitated the establishment of tribal governments.

15

Behavioral activation is a type of talk therapy that helps a patient get unstuck from negative mood spirals by noticing a connection between what they do and how they feel, and gradually adding more small and enjoyable actions back into life. Behavioral activation has the goal of decreasing avoidance, bolstering peer connection, and improving engagement in rewarding activities. Through behavioral activation, a client works with a counselor to start looking at actions that could help boost the mood. For example, it might start with a goal to get out of one's pajamas and to shower every morning. Feeling a little bit better just by taking that step, the patient then could reach out to get extra support catching up in poor school subjects. In other words, rather than waiting to feel better, the patient does things that align with personal values and that will lead to feeling better.

Based on the text, why is behavioral activation successful in treating depression?

A) It encourages the patient to do what feels most comfortable at the time.

B) It uses incremental steps to form patterns of behavior that alter emotions.

C) it focuses on solving the problems that triggered the depressed behavior.

D) It emphasizes long–term goals that can be attempted when the patient is healthy

16

In the Solomon Islands, cowry shells were sewn into long pieces of cloth as a form of currency, and although _____ use has declined, they have not been completely replaced by modern coinage.

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

A) its

B) their

C) there

D) they're

17

Volcanoes come in all sizes and shapes, but they all fall into three basic structural patterns known as cinder cone, _____ shield formations.

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

A) composite (or stratovolcano), and

B) composite, (or stratovolcano), and

C) composite (or stratovolcano) and,

D) composite, (or stratovolcano) and,

18

Numerous theorists have offered minimum wage as a mechanism for leveling economic inequality by enabling lower–paid workers to earn more money. However, Professor David Neumark, in conjunction with Dr. William Wascher of the Federal Reserve Board, _____ with this view. The results of their literature survey covering over 100 papers revealed that only 10 percent reported positive results and over two–thirds documented increased disparity.

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

A) dissent

B) dissents

C) dissenting

D) have dissented

19

People in developed nations often take water for _____ over 2 billion people in the world do not have access to safe drinking water; 670 million people have no handwashing facilities at all.

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

A) granted but;

B) granted; but

C) granted, but

D) granted but

20

Wheat and rice are the most common cereal crops in the world and are consumed as the staple part of diets in many countries, but there are many other cereal _____ that can be eaten directly or fed to meat animals.

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

A) crops—such as rye and sorghum—

B) crops, such as rye, and sorghum,

C) crops—such as rye and sorghum,

D) crops, such as rye and sorghum—

21

Inuit is the common name for a group of indigenous peoples who live in the arctic and subarctic regions. The term was originally used by the Alaskan Inupiat people, so is not always used in self–reference by all the _____ Labrador, Quebec, Nunavut, and the Northwest Territories.

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

A) sub–groups in Greenland,

B) sub–groups in: Greenland,

C) sub–groups in: Greenland

D) sub–groups; in Greenland,

22

According to _____ the variation among the sites would increase over time, as random chance caused different species to go extinct in some areas but not others.

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

A) Clark the neutral model would predict that:

B) Clark, the neutral model would predict that

C) Clark, the neutral model would predict: that

D) Clark the neutral model would predict, that

23

There are so many sub–fields in science that sometimes the distinctions are hard to determine, and many overlap. _____ paleontology is the study of ancient life, including creatures ranging from as small as microbes to as large as dinosaurs, but paleoichthyology focuses exclusively on the study of prehistoric fish.

Which choice completes the text with the most logical transition?

A) Or else,

B) Even so,

C) For instance,

D) On the whole,

24

Echolocation is a form of sonar in which an animal emits a sound and, using the resulting echo, can locate and identify various objects. Echolocation is highly developed in only a few species, such as bats, whales and dolphins. _____ it is also present in a limited form among shrews and two species of cave-dwelling birds.

Which choice completes the text with the most logical transition?

A) However,

B) Consequently,

C) Accordingly,

D) Clearly,

25

It turns out that 21.6 percent of the population in the United States are bilingual and speak a language other than English in their homes. _____ that may seem like a large percentage, it is far lower than the worldwide average of 43 percent of the population speaking at least two languages.

Which choice completes the text with the most logical transition?

A) Although

B) Because

C) Despite

D) Since

26

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

- Maya Angelou was a famous civil rights activist, poet, and author, though she held many other roles throughout her life.

- *I Know Why the Caged Bird Sings* (1969) is one of her most acclaimed books; it publicly reveals details about her private life up to the age of 17.

- She was asked to read the poem "On the Pulse of Morning" at President Bill Clinton's inaugural ceremony in 1993.

- She directed her first movie, *Down the Delta,* in 1996, though she had previously participated in acting and production of other movies.

- Published in 2013 when she was 85 years old, *Mom & Me & Mom* recounts her complex relationship with her own mother.

- At her death in 2014, she was working on a new book about her experiences with different world leaders.

The student wants to emphasize an underlying theme in some of Maya Angelou's books. Which choice most effectively uses relevant information from the notes to accomplish this goal?

A) Maya Angelou wrote a wide variety of works in her later years, including *Down the Delta* and *Mom & Me & Mom*.

B) Many of Maya Angelou's works, such as *I Know Why the Caged Bird Sings* and *Mom & Me & Mom*, are autobiographical.

C) Maya Angelou had close contact with many world leaders, as shown by reading "On the Pulse of Morning" at President Bill Clinton's 1993 inaugural ceremony and writing a book on the subject prior to her death.

D) While some of her books received great critical acclaim, such as *I Know Why the Caged Bird Sings*, others were not popular, such as Mom & Me & Mom.

27

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

- In 1803, Luke Howard first defined the different categories of clouds.

- Cirro–form clouds are high and wispy, like curls of hair. They usually appear before a change in weather.

- Cumulo–form clouds are tall, reaching from low to high in the sky because they are formed by rising humid air. They have a flat base and distinct shapes, like fluffy cotton balls.

- Strato–form clouds are low, wide, and flat. They often cover the whole sky in a gray or white layer and do not have clear edges.

- Nimbo–form clouds are the type that bring rain or snow. They are actually a combination of the other three cloud forms, so can be similar in shape to any of the others.

The student wants to emphasize how nimbo–form clouds differentiate from the other three types. Which choice most effectively uses relevant information from the notes to accomplish this goal?

A) Unlike other types of clouds, nimbo–form clouds produce precipitation.

B) Nimbo–form clouds are much larger than other types of clouds.

C) Different from other cloud types, nimbo–forms do not have any shape.

D) While other clouds are low in the sky, nimbo–form clouds are high.

No Test Material On This Page

Reading and Writing Test

27 QUESTIONS | 32 MINUTES

DIRECTIONS

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1

The cane toad (*Rhinella marina*) was _____ to South America but was transported to Australia in 1935 in an attempt to control the beetle infestations on sugarcane plantation.

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

A) innate

B) congenital

C) pandemic

D) endemic

2

Be aware that some _____ business opportunity promoters have been known to name "insiders" who give glowing—but bogus— recommendations. Don't just talk to the few people they suggest. Choose whom to contact. What if what the seller is telling you is different from what's on the disclosure document or what you hear from another buyer? Step on the brake.

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

A) arguable

B) questionable

C) improbable

D) unresolved

3

The following text is adapted from Abraham Lincoln's last public address, given on April 11, 1965

If this course of rejection has any tendency to bring Louisiana into proper practical relations with the Union, I have, so far, been unable to perceive it. If, on the contrary, we <u>recognize</u>, and sustain the new government of Louisiana the converse of all this is made true.

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

A) identify

B) accept

C) realize

D) appreciate

4

The Business Opportunity Rule governing franchise sales says that a seller has to give you the disclosure document at least seven days before you sign a contract or pay them anything. Use that time to check out the information in the disclosure document, including contacting references. Be aware that some questionable business opportunity promoters have been known to name "insiders" who give glowing—but bogus—recommendations. Don't just talk to the few people they suggest. Choose whom to contact. What if what the seller is telling you is different from what's on the disclosure document or what you hear from another buyer? Step on the brake. An inconsistency could be a tell–tale sign of a business opportunity rip–off. However, it is important to remember that many business investments have a wide range of returns, so not all differences in profit are a deliberate attempt to scam a potential buyer.

What is the purpose of the information that the seller must disclose at least seven days before signing a contract?

A) To point out that there is adequate time to make a decision

B) To emphasize that the buyer is under a lot of pressure

C) To indicate that honest references take time to find

D) To offer the reason that sellers secure bogus recommendations

5

In order to learn more about the properties of fire in space, scientists aboard the International Space Station have conducted many experiments. Their goal is to gain valuable insight into the mechanisms of fire that will ultimately help prevent fires on spacecraft or offer solutions to quickly extinguish such fires. Flames act very differently in an environment devoid of gravity than they do on Earth. For example, spheres of light form, and the flames can ignite at extremely low temperatures. On Earth, a standard gas stove burns at about 3100 degrees Fahrenheit, but a sustained flame can burn at 900 degrees in the International Space Station.

What is the main purpose of the underlined portion in the overall structure of the text?

A) It highlights the motivation for conducting the experiments.

B) It outlines the methodology the scientists are using to conduct the experiments.

C) It offers a point of comparison for the results of the experiments.

D) It presents an example of the phenomenon viewed in the experiments.

6

This passage is adapted from Emma Lazarus's poem *Spring Star.*

> Over the lamp–lit street,
>
> Trodden by hurrying feet,
>
> Where mostly pulse and beat
>
> Life's throbbing veins,
>
> See where the April star,
>
> Blue–bright as sapphires are,
>
> Hangs in deep heavens far,
>
> Waxes and wanes.

What is the main structure of the text?

A) It establishes a contrast between two images.

B) It shows the futileness of an action.

C) It offers a solution to a problem.

D) It elaborates on an extended metaphor..

7

The following text is adapted from F. Scott Fitzgerald's 1992 novel, *The Beautiful and the Damned*.

Young Anthony had one picture of his father and mother together—so often had it faced his eyes in childhood that it had acquired the impersonality of furniture, but everyone who came into his bedroom regarded it with interest. It showed a dandy of the nineties, spare and handsome, standing beside a tall dark lady with a muff and the suggestion of a bustle. Between them was a little boy with long brown curls, dressed in a velvet Lord Fauntleroy suit. This was Anthony at five, the year of his mother's death.

Which choice best summarizes the text?

A) A young man reminisces about his family.

B) A man's family's appearance is explained.

C) An aristocrat's achievements are outlined.

D) The cause of a tragic event is revealed.

8

The Panama Canal stands as one of the greatest feats of engineering in all time. The idea was not new—in 1534, Charles, King of Spain, ordered a survey of the region—but it took until 1904 for the self-educated engineer John Frank Stevens to solve the technical problems with an intricate lock system and numerous inventions of equipment for the specialized tasks. Equally important were the efforts of Sanitation Engineer William C. Gorgas, who tirelessly oversaw the efforts to keep the work crews healthy. Entire cities of workers and their families needed food, clean water, medical care, and other essential services.

Based on the passage, why is William Gorgas key in building the Panama Canal?

A) He was able to invent equipment that performed different functions.

B) He was a doctor who took care of the workers' medical needs.

C) He was zealous about fulfilling duties regarding the health of workers.

D) He surveyed the area to determine the best way to build cities for workers.

9

George Herman "Babe" Ruth, Jr. (1895–1948) played 22 seasons of Major League baseball. He started as a left–handed pitcher but made his fame as an outfielder and powerful batter, earning the title "Home Run King." Despite the decades that have passed since he stepped off the field, Babe Ruth is still a household name and considered one of the greatest American sports heroes. He was fortunate in that respect, as fans celebrated his triumphs against the background of news from World War I and the 1918 influenza pandemic.

Based on the text, what is one reason why Babe Ruth became so famous?

A) He was an excellent pitcher.

B) He showed people success during a grim time.

C) He fought in World War I.

D) He suffered from the 1918 influenza pandemic.

10

The extreme temperatures on the planet Mercury make it unlikely that there is any life on the planet in a form we would recognize. Mercury is closest to the Sun, and therefore the daytime temperatures are extremely hot, up to 800 degrees Fahrenheit (430 degrees Celsius). Since there is only a residual atmosphere, nights are much colder. In fact, despite its proximity to the Sun, Mercury_____

Which choice most logically completes the text?

A) has an egg–shaped orbit which changes its distance from the Sun.

B) rotates around the Sun faster than any other planet, in only 88 days.

C) is approximately the same size as Earth's moon and covered with craters.

D) might even be cold enough to have permanent water ice near the poles.

11

Median annual wages for urban and regional planners in selected industries in the United States, May, 2019


Median Income
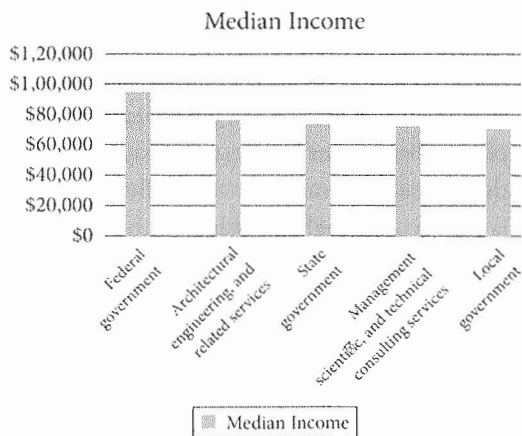
The median annual wage for urban and regional planners was $73,050 in May 2018. The median wage is the wage at which half the workers in an occupation earned more than that amount and half earned less. The lowest 10 percent earned less than $45,180, and the highest 10 percent earned more than $114,170. The median rate varies depending on the field of the planning as well. For instance, the median income is _____ .

Which choice most effectively completes the example using information from the graph?

A) higher for state government employees than for local government employees

B) greater for those in architectural, engineering, and related fields than for those in any government position

C) lower for those working in the government than for those who work in private industries such as engineering or related services

D) not as high for management, scientific, and technical consulting service employees as it is for local government employees.

12
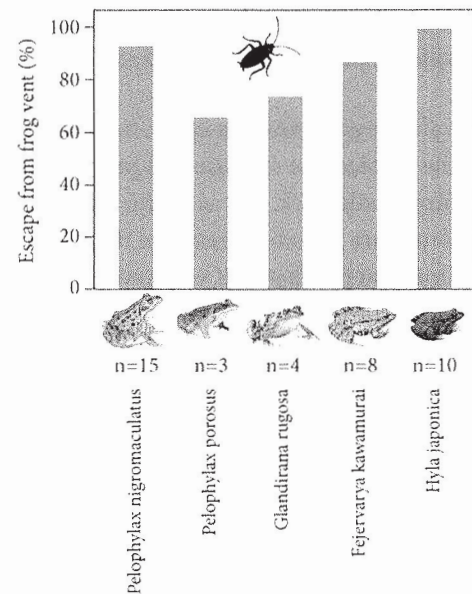
"This study, authored solely by Sugiura Shinji, an ecologist from Kobe University in Japan, describes how the Japanese water scavenger beetle (Regimbartia attenuate) manages to extricate itself from inside several species of frog within 6 hours of being swallowed. Active escape of the aquatic beetle Regimbartia attenuata from the vents of five frog species via the digestive tract. Although adult beetles were easily eaten by frogs, _____."

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

A) a maximum of 65% of swallowed beetles were excreted were still alive.

B) on average the swallowed beetles were excreted did not survive.

C) it took less than 6 hours for the swallowed beetles to be extracted.

D) an average of 90% of swallowed beetles were excreted were still alive.

13

The following text is adapted from Herman Melville's 1851 novel, *Moby Dick; or The Whale*.

I always go to sea as a sailor, because of the wholesome exercise and pure air of the fore–castle deck. For as in this world, head winds are far more prevalent than winds from astern (that is, if you never violate the Pythagorean maxim), so for the most part, the Commodore on the quarter–deck gets his atmosphere at second hand from the sailors on the forecastle. He thinks he breathes it first; but not so. In much the same way do the commonalty lead their leaders in many other things, at the same time that the leaders little suspect it. But wherefore it was that after having repeatedly smelt the sea as a merchant sailor, I should now take it into my head to go on a whaling voyage; this the invisible police officer of the Fates.

With which idea about captains would the narrator most likely agree?

A) They have worked hard to earn their position.

B) They are greatly worthy of respect.

C) They do not understand the needs of simple sailors.

D) They are mistaken about the extent of their power.

14

The planet Venus is the second closest to the Sun in our solar system, but is generally hotter than the closest planet, Mercury—the average temperature is 462 degrees Celsius. That is because the atmosphere contains about 96 percent carbon dioxide, creating a greenhouse effect that is like having a giant blanket over the planet that retains the heat. The sulfuric acid in the atmosphere makes it very reflective, so Venus is the second brightest object in the night sky after the Moon.

According to the text, what is most likely true about the planet Mercury?

A) It does not have any sulfuric acid in its atmosphere.

B) Its temperature never exceeds 462 degrees Celsius.

C) It has less than 96 percent carbon dioxide in its atmosphere.

D) It is difficult to locate in the night sky because it is dark.

15

Coffee is the third most consumed beverage in the world, a welcome statistic for the people in Uganda, _____ is the leading cash crop.

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

A) there, it

B) where it

C) which

D) it

16

A classic image of colonial cooperation, _____. Martha kept detailed records of her experiences in the American frontier for over three decades.

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

A) the diary of an 18th–century midwife named Martha Ballard documents several quilting bees

B) an 18th–century midwife named Martha Ballard documented several quilting bees in her diary

C) Martha Ballard, an 18th–century midwife, documented several quilting bees in her diary

D) several quilting bees were documented in the diary of an 18th–century midwife named Martha Ballard

17

Marilyn Monroe, the iconic actress and fashion model from the 1950s and '60s, is attributed as ____ women rarely make history." In reality, the credit should go to Laurel Thatcher Ulrich, who was a student at the time but who later went on to become a professor at Harvard University.

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

A) saying that, "Well–behaved

B) having said that: "well–behaved

C) she said, "Well–behaved

D) saying that "well–behaved

18

Volunteers of America is a non–profit organization which helps homeless, disabled, senior, and other underserved individuals regain a balanced life. Over the past 125 years, the _____ have helped an average of 1.5 million people annually.

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

A) volunteers efforts'

B) volunteer's efforts

C) volunteers' efforts

D) volunteers's efforts'

19

Henry Wadsworth Longfellow's detailed poems greatly influenced the perception of various historical events, such as Paul Revere's nighttime ride during the American Revolutionary war, even though he sometimes sacrificed accuracy for eloquence to make the poems more engaging.

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

A) sacrificed accuracy for eloquence

B) sacrificed—accuracy for eloquence—

C) sacrificed: accuracy for eloquence

D) sacrificed (accuracy for eloquence)

20

Archaeologists determined that a pair of sandals made from sagebrush bark that were found in a cave in Oregon in 1939 are actually the oldest extant example of shoes in the _____ specimens have been dated to between 7,000 and 8,000 BCE.

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

A) world; and the

B) world. Because the

C) world, the

D) world. The

21

Inflation is when the prices of goods and services generally increase, resulting in a decrease in the purchasing power of money. Economists debate about the effects of low levels of _____ high levels of inflation are universally accepted as disruptive to an economy.

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

A) inflation,

B) inflation;

C) inflation:

D) inflation

22

Edward Tingatinga's professional art career only lasted four years. _____ he is considered one of the most influential modern African painters and was the founder of an art style now archetypal in Tanzania.

Which choice completes the text with the most logical transition?

A) Therefore,

B) Even so,

C) Specifically,

D) Moreover,

23

Dogs trained for search and rescue have the same goal of finding humans, but there are actually two main methods that the dogs use to reach this goal. One is called air scent, in which a dog sniffs its surroundings and makes a straight line for the target once the scent is detected. _____ a dog sniffs the ground and follows the specific route that the person took, even if the path is very convoluted. This method is called tracking.

Which choice completes the text with the most logical transition?

A) Furthermore,

B) Precisely,

C) However,

D) Alternatively,

24

Tropical saltwater fish are beautiful to watch, but they take a lot of time and special equipment to maintain properly. That equipment is not cheap, either. A standard tank with fish can easily cost around $2,000 to set up, and there are monthly expenses such as food, salt, and minerals, which can run over $35 a month for a 50–gallon tank. _____ the upkeep alone is equivalent to over two coffee lattes from a specialty store every week.

Which choice completes the text with the most logical transition?

A) On the other hand,

B) Even so,

C) In addition,

D) In other words,

25

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

- Ada Lovelace (nee Byron) was born 1815 and was very interested in science and math from an early age, so her tutor introduced her to the mathematician Charles Babbage.

- Babbage is considered the "Father of the computer" because he invented an "Analytical Machine," which he used to calculate numbers.

- It is possible that Lovelace wrote the first computer program in the world because she helped design programs for the Analytical Machine.

- In a 1842–1843 Italian translation explaining how the Analytical Machine worked, she wrote down a program in an appendix that was not in the original materials provided by Babbage.

- She realized that the Analytical Machine could be used for non–numerical purposes if other symbols such as letters or musical notes were substituted.

The student wants to emphasize that Ada Lovelace's contributions to mathematics are just as important as Charles Babbage's. Which choice most effectively uses relevant information from the notes to accomplish this goal?

A) Charles Babbage is famous for creating the Analytical Machine, but Ada Lovelace also was interested in explaining how it worked to others, even in different languages.

B) Ada Lovelace wrote a program for the Analytical Machine in 1842–1843, without which Charles Babbage would not have been able to create a working computer.

C) Charles Babbage, Ada Lovelace's tutor, introduced her to the Analytical Machine, and she excelled beyond his abilities at using it.

D) Although Babbage invented the Analytical Machine, Ada Lovelace was able to explain how it worked, create effective programs, and offer additional uses beyond mathematical calculations.

26

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

- Edward Tingatinga was born in 1932 in a small town called Namochelia in Tanzania.

- An art movement was named after his unique style of cartoon–like animals and landscapes.

- He tried his hand as a musician, and only started painting in 1968. His work was first done using recycled materials like old boards and bicycle paint.

- His work became popular among tourists so he was able to be an artist full time. He started a gallery and studio in 1970.

- In 1972 he was accidentally killed by a policeman who mistook him for someone else.

- His students continue to paint using his style and today his gallery is the largest in Africa.

The student wants to emphasize how influential Edward Tingatinga's painting is in Africa. Which choice most effectively uses relevant information from the notes to accomplish this goal?

A) Edward Tingatinga painted using recycled materials, which started a trend towards using recycled art by a wide range of artists.

B) Though his art career only lasted four years, Edward Tingatinga's art was appealing enough to build a following that carries on the art style today.

C) Edward Tingatinga was the most popular artist of animals and landscapes for tourists to Africa, so his original paintings are highly sought–after today.

D) Despite using recycled materials, Edward Tingatinga became so famous that other artists copied and sold pictures of his artwork.

27

Yellowstone National Park is a popular tourist site, but it is also an active supervolcano. Over the past 2.1 million years, it has erupted with such force that there are layers made of ash and pumice 400 meters thick in places. The most recent giant explosion, about 640,000 million years ago, emitted huge amounts of lava. _____ Now, the park's famous geysers and hot springs are heated by the remaining pools of magma, which are at most 15 percent of their former size.

Which choice most effectively anticipates and addresses a relevant counterargument to the assertion presented in the passage?

A) About 70,000 years ago, there was another eruption, but it was not of the same magnitude and consisted mostly of lava.

B) Geologists have determined that Yellowstone had three supereruptions as well as several lesser eruptions.

C) One might expect a giant peak, but so much magma poured out each time that the underlying reservoirs collapsed and formed a giant caldera.

D) The region to the southwest, the Snake River Plain, had eruptions prior to the supereruptions at Yellowstone.

STOP

1

Which of the following describes the transformation of a circle with the equation $(x - 3)^2 + (y + 6)^2 = 49$ to a circle with the equation $(x - 2)^2 + y^2 + 8y = 33$?

A) The circle moves 1 to the right and 2 up

B) The circle moves 1 to the right and 2 down

C) The circle moves 1 to the left and 2 up

D) The circle moves 1 to the left and 2 down

2

How many solutions are there to the equation below?

$$(x - 1)(x + 2) = x (x - 3)$$

A) 0

B) 1

C) 2

D) 4

3

If the system below has an infinite number of solutions, what would be the value of p ?

$$3(x - 6) - 2 (x + 2) = px - 5x - 22$$

4

If the number of weeds on a farm is represented by the function $f(x) = 1,300(1.995)^x$, where x is in weeks, which of the following statements is true about the model?

A) The number of weeds on the farm in the beginning was 1.995

B) The number of weeds on the farm increases by 1.995 every x weeks

C) The number of weeds on the farm increases by 99.5% every x weeks

D) The number of weeds on the farm increases by 1,300 every x weeks

5

Which of the following is equivalent to $(x - 2)^2 (x + 2)^2$?

A) $x^4 - 8x^2 + 16$

B) $x^4 - 16$

C) $x^4 + 8x + 16$

D) $x^4 + 16$

6

A food scientist measures 27 different foods whose calorie content is shown below. What is the difference between the mean and the median of the calorie content of the 27 foods, rounded to the nearest tenth of a calorie?

Calorie content	Frequency
100	6
180	9
280	11
350	1

7

What is the x-intercept for the following equation

$x = 3^{y-1} + \dfrac{5}{3}$?

A) $\dfrac{5}{3}$

B) 3

C) 2

D) $\dfrac{1}{3}$

8

30 Grade 11 students in a summer math class were asked what is the hardest subject for them. 80% of the students said that Statistics was the hardest while the rest chose Physics as the hardest subject. Which of the following statements can best be concluded from this information?

A) 80% of the students in the summer math class think Statistics is the hardest subject.

B) 20% of the Grade 11 students think Statistics is the hardest subject.

C) 80% of the Grade 11 students in the math summer class think Physics is the hardest subject.

D) 20% of the grade 11 students in the math summer class think Physics is the hardest subject.

9

If $-3(x + 3)^2 + 9 + x = ax^2 + bx + c$, what is the value of $a + b + c$?

10

If the maximum point for a quadratic equation $f(x)$ is (3, 2), and it passes through the point (2, 0), which of the following is a solution for x to the quadratic equation?

A) −2

B) 4

C) −16

D) 12

11

What is the value of the slope of a line that passes through the origin and point (3, 5)?

A) $\dfrac{3}{5}$

B) $-\dfrac{3}{5}$

C) $\dfrac{5}{3}$

D) $-\dfrac{5}{3}$

12

If (a, b) is a solution to the following system of inequalities, which of the following represents the minimum value of b?

$$y \geq 2(x - 3)^2 + 5$$
$$y \leq x + 3$$

A) 3

B) −3

C) −5

D) 5

13

What is the volume of a sphere with a radius of 3?

14

If the system of equations below has no solution, which of the following would be a possible value of p?

$$3x - 4y = 8$$
$$px + 8y + 6 = 0?$$

A) −6

B) 6

C) 2

D) −2

15

What is the center for the equation of the circle given below

$$x^2 + 6x + y^2 - 6y = 63 ?$$

A) $(3, -3)$

B) $(6, -6)$

C) $(-6, 6)$

D) $(-3, 3)$

16

If one of the solutions for the quadratic equation below is $\dfrac{3 + \sqrt{g}}{3}$, what is the value of g?

$$3x^2 - 6x - 11$$

17

Which of the following is NOT a solution to the following inequality

$$-2x \geq -4 - x ?$$

A) 4

B) 5

C) 3

D) 2

18

What are the possible solutions to the equation below

$$\sqrt{2x + 5} = x - 5 ?$$

A) 2

B) 10

C) 2 and 10

D) -2 and -10

19

If $\dfrac{5}{x} = \dfrac{2}{y}$ and $\dfrac{4}{x} - \dfrac{2}{y} = -\dfrac{1}{5}$, what is the value of xy?

20

If $\dfrac{3x^2 + 7x + 9}{x - 2} = 3x + 13 + \dfrac{A}{x - 2}$. What is the value of A?

A) 19

B) 7

C) 35

D) -23

21

A zookeeper conducted a study on the mass of penguins in the zoo. He found that the mean mass of the penguins in the zoo is 67.9 *kgs*. He estimated that the margin of error for the mean mass is 4.5 *kgs*. Which of the following statements can best be concluded from the study he conducted?

A) The mass of the penguins in the zoo is between 72.4 *kgs* and 63.4 *kgs*.

B) The mass of all penguins is 67.9 *kgs*.

C) The median mass of penguins in the zoo lies between 72.4 *kgs* and 63.4 *kgs*.

D) The mean mass of the penguins in the zoo lies between 72.4 *kgs* and 63.4 *kgs*.

22

How many solutions does the system below have ?
$$3(x - 3) + 2(x + y) = 5x + 2y - 9$$

A) 0

B) Infinitely many

C) 1

D) 2

No Test Material On This Page

1

Which of the following equations is equal to
$$3(x + 5)^2 - 2(x - 5)^2 + 2x ?$$

A) $x^2 + x + 125$

B) $3x^2 + 52x + 25$

C) $x^2 - 2x - 25$

D) $x^2 + 52x + 25$

2

Which of the following is equivalent to

$\dfrac{1}{x-2} + \dfrac{2x}{5-x}$, for all values of x, where $x \neq 2$ and

$x \neq 5$?

A) $\dfrac{2x^2 - 5x + 5}{-x^2 + 7x - 10}$

B) $\dfrac{2x + 1}{-3}$

C) $\dfrac{2x + 1}{3}$

D) $\dfrac{2x + 1}{(5 - x)(x - 2)}$

3

What is the value of y for the system below?
$$3(x - 2) + 5y = 2$$
$$y = -2(x - 5)$$

4

Which of the following best describes the line of best fit for the graph below?
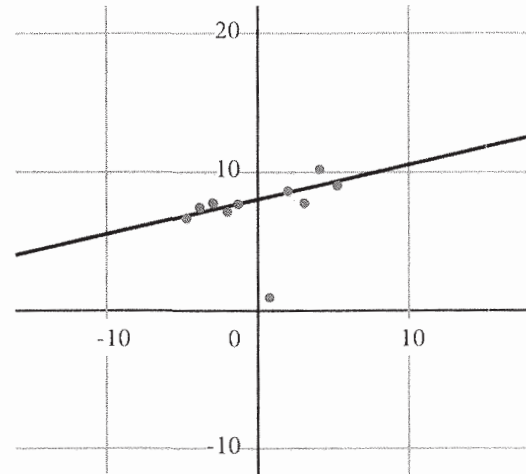
A) $y = \dfrac{1}{4}x + 8$

B) $y = 4x + 8$

C) $y = \dfrac{1}{4}x - 8$

D) $y = \dfrac{-1}{4}x + 8$

5

If angle AOB is $\dfrac{7}{12}\pi$, what is the value of the arc length AB, given that the radius of the circle is 6 cm?
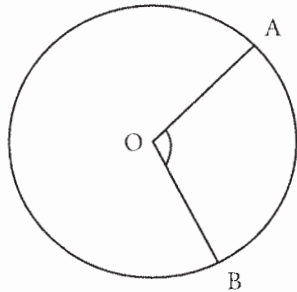
A) $12\pi\ cm$

B) $36\pi\ cm$

C) $\dfrac{7}{2}\pi\ cm$

D) $\dfrac{21}{2}\pi\ cm$

6

What is the sum of the roots for the equation given below

$$2x^2 + 6x + 4 = 0 ?$$

A) -3

B) -2

C) 2

D) 3

7

If the difference of the sum of the interior angles in a hexagon and that of a heptagon is $a\pi$, what is the value of a?

8

Given that $f(3) = 2$ and $f(6) = -3$, which of the following functions best describes $f(x)$?

A) $f(x) = -\dfrac{5}{3}x + 7$

B) $f(x) = \dfrac{2}{3}x - 6$

C) $f(x) = -\dfrac{3}{5}x$

D) $f(x) = \dfrac{3}{5}x + 2$

9

Given that $2(x + 4) = 18$, what is the value of $x + 6$?
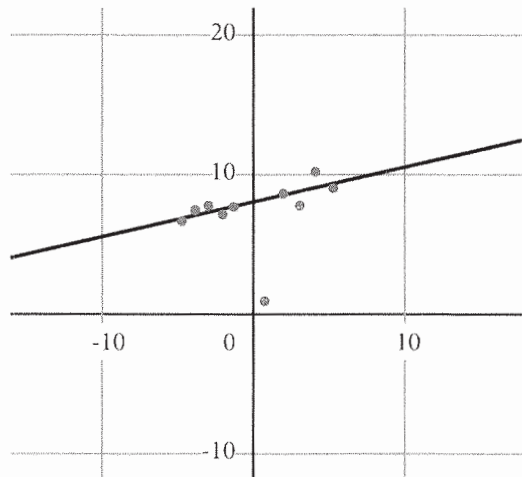
A) 9

B) 5

C) −4

D) 11

10

An educational fair is attended by students and parents in a state. If 2,000 students attended the fair, and the ratio of students to parents in the fair is 5:3.5, how many people attended the fair?

11

Find the percent decrease from the actual value y for when $x = 4$ and the predicted value y for when $x = 4$.

A) 22.22%

B) 33.33%

C) 50%

D) 18.18%

12

Which of the following coordinates represent a solution to the following system of inequalities

$$y > -3x + 5$$

$$y > 2x?$$

A) $(2, 4)$

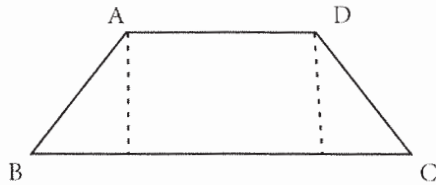B) $(1, 4)$

C) $(4, 3)$

D) $(2, 1)$

13

What is one possible positive solution to the equation below?

$$3\,|x - 4| = 6$$

14

If AB = DC and segment AD is parallel to segment BC, and AD = 12, DC = 10, and BC = 28, find the area of the figure ABCD below (not drawn to scale).

A) 120

B) 60

C) 96

D) 48

15

How many solutions does the equation below have

$$2\,|\,x + 3\,| - 3\,|\,x + 3\,| = -2\ ?$$

A) 0

B) 1

C) 2

D) There isn't sufficient information to answer the question.

16

What is the value of the slope of a line perpendicular to the line $5x - 6y + 30 = 0$

17

Which of the following is equivalent to $\cos 72°$?

A) $tan\ 18°$

B) $sin\ 72°$

C) $sin\ 18°$

D) $cos\ 18°$

18

The weather channel predicted that there will be a 0.26 chance that it will rain this week. What is the probability that it will not rain this week?
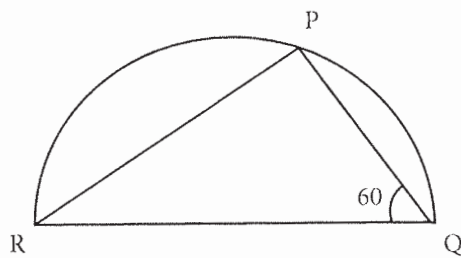
A) 0.62

B) 0.74

C) 0.26

D) 1

19

What is the maximum value of t for the given equation $v(t)$?

$$v(t) = -3t^2 + 9t + 12$$

20

If the semi–circle below has a radius of 7 and angle PQR = 60°, what is the length of side PR?

A) 14

B) 7

C) $7\sqrt{2}$

D) $7\sqrt{3}$

21

Which of the following is a solution to the inequality $|x + 3| > 4$?

A) –5

B) –9

C) –2

D) –7

22

If $3x + 4y = 31$ and $2x + 3y = 22$, what is the value of $x + y$?

A) 9

B) 5

C) 4

D) 11

STOP

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