

# Writing Locator Test, Part I

**Directions: Choose the one best answer to each question.**

Questions 1 through 4 refer to the following letter.

Dear Mr. Ramirez:

**(A)**

(1) Thank you for your recent application for a position at Goldwell industries, Inc. (2) We are pleased to know of your interest in hour company.

**(B)**

(3) We do not have any openings currently that are a match for your skills. (4) However, we will keep your application on file for six months, we may contact you during that time. (5) At the end of six months, we took your application out of our active file. (6) However, we invite you to return to our office and update your application at any time.

Sincerely,

Jessica Watterstein  
Human Resources Associate

- 1. Sentence 1: Thank you for your recent application for a position at Goldwell industries, Inc.**

Which correction should be made to sentence 1?

- (1) replace your with you're
- (2) insert a comma after recent
- (3) insert a comma after application
- (4) change Goldwell to goldwell
- (5) change industries to Industries

- 2. Sentence 2: We are pleased to know of your interest in hour company.**

Which correction should be made to sentence 2?

- (1) replace are with our
- (2) replace know with no
- (3) replace hour with our
- (4) change company to Company
- (5) no correction is necessary

- 3. Sentence 4: However, we will keep your application on file for six months, we may contact you during that time.**

Which is the best way to write the underlined portion of this sentence? If the original is the best way, choose option (1).

- (1) months, we
- (2) months but we
- (3) months we
- (4) months, and we
- (5) months being that we

- 4. Sentence 5: At the end of six months, we took your application out of our active file.**

Which is the best way to write the underlined portion of this sentence? If the original is the best way, choose option (1).

- (1) we took
- (2) we will take
- (3) we takes
- (4) taking
- (5) they took

Questions 5 through 8 refer to the following information.

### How to Make the Best Investment in Home Security

#### (A)

(1) Most people worry about home security.  
(2) At least once in a while. (3) But before you make costly investments in new locks gates, or burglar alarm systems, review your personal phone list. (4) Do you know the names and numbers of your neighbors? (5) Do you know there children's names? (6) Do you recognize their cars?

#### (B)

(7) If you can answer "yes" to these questions, you already have one of the best security systems that money can't buy. (8) If not, your to-do list have a new job on it: Get friendly!

5. Sentences 1 and 2: **Most people worry about home security. At least once in a while.**

Which is the best way to write the underlined portion of these sentences? If the original is the best way, choose option (1).

- (1) security. At
- (2) security, and at
- (3) security. And at
- (4) security at
- (5) security, worrying at

6. Sentence 3: **But before you make costly investments in new locks gates, or burglar alarm systems, review your personal phone list.**

Which correction should be made to sentence 3?

- (1) replace you with they
- (2) insert a comma after locks
- (3) insert a comma after or
- (4) remove the comma after systems
- (5) replace your with you're

7. Sentence 5: **Do you know there children's names?**

Which correction should be made to sentence 5?

- (1) change Do to Does
- (2) change Do to Did
- (3) replace there with their
- (4) replace there with they're
- (5) no correction is necessary

8. Sentence 8: **If not, your to-do list have a new job on it: Get friendly!**

Which correction should be made to sentence 8?

- (1) replace your with you're
- (2) change have to has
- (3) change have to having
- (4) replace new with knew
- (5) no correction is necessary

Questions 9 through 12 refer to the following article.

### Health Is More than Medicine

#### (A)

(1) It is true that an injury hurts and that a virus can make a person sick. (2) However, these facts are not as simple as they might seem.

#### (B)

(3) For example, an emergency room doctor may treat two people with similar injuries, such as a sprained wrist. (4) One patient may experience great pain, the other may be only slightly uncomfortable. (5) In another situation, two healthy people are exposed to the same bad virus. (6) One of the people become sick, but the other does not. (7) In both these examples, doctors cannot explain the differences between the patients. (8) Some doctors and scientists are working to understand these health differences better. (9) They are studying negative factors, such as stress, abuse, and anger. (10) We are also looking at positive influences like prayer, relaxation, and meditation.

9. Sentence 4: One patient may experience great pain, the other may be only slightly uncomfortable.

Which is the best way to write the underlined portion of this sentence? If the original is the best way, choose option (1).

- (1) One patient
- (2) Won patient
- (3) Because one patient
- (4) After one patient
- (5) While one patient

10. Sentence 6: **One of the people become sick, but the other does not.**

Which correction should be made to sentence 6?

- (1) replace become with becomes
- (2) replace become with became
- (3) remove the comma after sick
- (4) insert a comma after but
- (5) change does to do

11. Which revision would improve the effectiveness of the article?

Begin a new paragraph with

- (1) sentence 2
- (2) sentence 5
- (3) sentence 6
- (4) sentence 8
- (5) sentence 9

12. Sentence 10: **We are also looking at positive influences like prayer, relaxation, and meditation.**

Which correction should be made to sentence 10?

- (1) replace We with They
- (2) replace We with You
- (3) change are to were
- (4) remove the comma after prayer
- (5) insert a comma after and

Questions 13 through 16 refer to the following information.

### **New Millennium TV: It's Reality!**

#### **(A)**

(1) When the next chapter in the history of television is written, reality TV will be the big story.

(2) As one television critic recently remarked his column is starting to read like "a kind of reality-TV diary."

#### **(B)**

(3) It only took a couple of years for the groundbreaking *Survivor* series to become old news.

(4) In the meantime, TV networks created plenty of new reality shows. (5) These new shows have some critics wondering. (6) They wonder if American television viewers have finally hit rock bottom in taste and judgment.

#### **(C)**

(7) They are too busy keeping up with all the developments on these programs. (8) And, judging by the reality TV fans' Internet sites, the ultimate goal for many of these fans is to get on TV themselves. (9) Maybe that's why reality TV is so popular. (10) Americans love to believe that one can achieve their dreams, and reality TV makes it look like anybody really can be a star.

- 13.** Sentence 2: **As one television critic recently remarked his column is starting to read like "a kind of reality-TV diary."**

Which correction should be made to sentence 2?

- (1) change remarked to remarks
- (2) insert a comma after remarked
- (3) change is to was
- (4) change is to are
- (5) no correction is necessary

- 14.** Sentences 5 and 6: **These new shows have some critics wondering. They wonder if American television viewers have finally hit rock bottom in taste and judgment.**

The most effective combination of sentences 5 and 6 would include which group of words?

- (1) These new shows, having some critics wondering, have
- (2) These new shows are wondering if
- (3) These new shows have some critics wondering if
- (4) These new shows, critics wonder, now that American television viewers
- (5) American television viewers wonder whether critics

- 15.** Which sentence would be most effective if inserted at the beginning of paragraph C?

- (1) Reality TV is happening mainly on the Internet.
- (2) Ordinary people can get on reality TV.
- (3) Reality TV is probably going out of style.
- (4) Reality TV fans don't seem to mind these questions.
- (5) Americans are basically dreamers.

- 16.** Sentence 10: **Americans love to believe that one can achieve their dreams, and reality TV makes it look like anybody really can be a star.**

Which correction should be made to sentence 10?

- (1) change love to loved
- (2) replace one with they
- (3) replace one with you
- (4) replace it with them
- (5) no correction is necessary





# Reading Locator Test

**Directions: Choose the one best answer to each question.**

Questions 1 through 4 refer to the following excerpt.

## **WAS BEN ENJOYING HIS RETIREMENT?**

If only he knew what time it was. Here in Chicago you couldn't tell whether it was four o'clock or seven unless you looked at your watch. To do that it was necessary to turn on the light. And to turn on the light meant that he would turn on, too, a flood of querulous [constant complaining] protest from his wife, Bella, who lay asleep beside him.

When for forty-five years of your life you have risen at four-thirty daily, it is difficult to learn to loll. To do it successfully, you must be a natural-born loller to begin with and revert. Bella Westerveld was and had. So there she lay, asleep. Old Ben wasn't and hadn't. So there he lay, terribly wide-awake, wondering what made his heart thump so fast when he was lying so still. If it had been light, you could have seen the lines of strained resignation in the sagging muscles of his patient face.

They had lived in the city for almost a year, but it was the same every morning. He would open his eyes, start up with one hand already reaching for the limp, drab work-worn garments that used to drape the chair by his bed. Then he would remember and sink back while a great wave of depression swept over him. Nothing to get up for. Store clothes on the chair by the bed. He was taking it easy.

From "Farmer in the Dell"  
By Edna Ferber

1. Which statement best describes what is happening at the beginning of the selection?  
Ben  
(1) wakes up in darkness but doesn't want to turn on a light and disturb his wife  
(2) is having a heart attack and needs to go to the hospital  
(3) wakes up in a strange place and is not sure where he is  
(4) gets out of bed without waking his wife and making her cranky  
(5) wakes his wife so she can help him get up
2. Based on the passage, which of the following is the best definition for "loll"?  
(1) city living  
(2) hard work  
(3) seeing in the dark  
(4) being lazy  
(5) resignation
3. In line 15, the writer uses the word *terribly* to describe how wide-awake Ben is in order to show which of the following?  
(1) how terrible it is to go without sleep  
(2) that Ben suffers when he lies awake in the early morning  
(3) that Ben is very tired but can't sleep  
(4) how Bella reacts when she is awakened  
(5) the narrator's attitude about waking up early
4. Which of the following statements best describes Ben's experience in retirement?  
(1) He enjoys his hobbies and friends.  
(2) He does not get enough sleep.  
(3) He is relieved that he doesn't have to get up early anymore.  
(4) He enjoys spending time with his wife.  
(5) He has found it hard to adjust to being retired.

Questions 5 through 8 refer to the following excerpt.

### ARE THESE CHARACTERS TELLING THE TRUTH?

MARY: *Quickly.* I'm not upset. There's nothing to be upset about. What makes you think I'm upset?

5 TYRONE: Why, nothing, except you've seemed a bit high-strung the past few days.

MARY: *Forcing a smile.* I have? Nonsense, dear. It's your imagination. *With sudden tenseness.* You really must not watch  
10 me all the time, James. I mean, it makes me self-conscious.

TYRONE: *Putting a hand over one of her nervously playing ones.* Now, now, Mary. That's your imagination. If I've watched  
15 you it was to admire how fat and beautiful you looked. *His voice is suddenly moved by deep feeling.* I can't tell you the deep happiness it gives me, darling, to see you as you've been since  
20 you came back to us, your dear old self again. *He leans over and kisses her cheek impulsively—then turning back adds with a constrained air.* So keep up the good work, Mary.

25 MARY: *Has turned her head away.* I will, dear.

From *Long Day's Journey into Night*  
By Eugene O'Neill

5. If Mary were mad at a friend, which of the following would she most likely do?
  - (1) complain to a friend
  - (2) angrily confront her friend
  - (3) pretend that nothing was wrong
  - (4) spread rumors about her friend
  - (5) discuss the problem with her friend
  
6. The stage directions suggest that the characters feel
  - (1) on edge
  - (2) relaxed
  - (3) angry
  - (4) happy
  - (5) tired
  
7. Most likely, Mary has been away because
  - (1) Tyrone was cruel to her
  - (2) she was visiting a good friend
  - (3) she was assisting a family member who was ill
  - (4) she was receiving treatment for some disorder
  - (5) she took a vacation
  
8. Which of the following statements best sums up Mary and Tyrone's relationship?
  - (1) They would be better off living apart.
  - (2) The focus of Mary's life is taking care of Tyrone.
  - (3) Tyrone is unhappy that Mary is back at home.
  - (4) They are not completely truthful with each other.
  - (5) They are always truthful with each other.

Questions 9 through 12 refer to the following selection.

### **ARE ORPHANAGES TERRIBLE PLACES TO GROW UP IN?**

When most people hear the word *orphanage*, they don't think of great opportunities for children to heal and grow. Orphanages are not very common in modern times, but there are a few that can be very special places. These homes can give children routine, structure, and stability, along with love, care, and guidance. One successful modern-day orphanage is Hephzibah Home in Oak Park, Illinois.

- 10 A boy named John lived in Hephzibah Home from age 6 to 10. John's memories of Hephzibah Home are very positive. He feels that he was very lucky to have been removed from the foster-care system and placed in this home. He remembers that the Hephzibah Home staff helped him become involved in the community, especially through sports at the community center. He was also matched with a mentor—a volunteer who has remained his friend even though John left Hephzibah Home years ago.

John, now 19, is in a special college program funded by the Department of Children and Family Services. He lives in a dorm and attends a community college. He still visits the orphanage where he once lived. He knows how much his own story means to the children who live there now. His success is their hope.

9. According to the selection, which of the following was true about John when he was 6 to 10 years of age?
- (1) He attended a special school.
  - (2) He was a ward of the courts.
  - (3) He lived with relatives, not his parents.
  - (4) He lived in a dormitory.
  - (5) He lived in an orphanage.

10. Which of the following statements is most likely to be true, based on the information in the selection?
- (1) Most people are aware of the benefits of modern-day orphanages.
  - (2) Most people believe that orphanages do not make good homes for children.
  - (3) Most people think that children are better off living in orphanages.
  - (4) Most children living in orphanages have to stay there until they are 18 years old.
  - (5) Most children living in orphanages can't participate in community programs.
11. Which of the following was probably one of the benefits John experienced in the orphanage?
- (1) He received extra income from working in the orphanage.
  - (2) He was not required to do regular chores or clean his room.
  - (3) He was excused from attending school on a regular basis.
  - (4) He was prevented from attending activities outside the orphanage.
  - (5) He had a regular schedule for meals, school, playtime, and homework.
12. The author's purpose in writing this article about John's experience at Hephzibah Home was to
- (1) show readers how a modern-day orphanage can help children
  - (2) recruit staff members to work in modern-day orphanages
  - (3) help John make a transition from the orphanage back into society
  - (4) make readers feel sorry for the children in modern-day orphanages
  - (5) persuade readers that orphanages are not safe for today's children

Questions 13 through 16 refer to the following poem.

### IS HOPE STRONG, OR IS IT FRAGILE?

“Hope” is the thing with feathers—  
That perches in the soul—  
And sings the tune without the words—  
And never stops—at all—

5 And sweetest—in the Gale—is heard—  
And sore must be the storm—  
That could abash the little Bird  
That kept so many warm—

10 I’ve heard it in the chilliest land—  
And on the strangest Sea—  
Yet, never, in Extremity,  
It asked a crumb—of Me.

“‘Hope’ is the thing with Feathers”—(254)  
By Emily Dickinson

13. In this poem, Emily Dickinson uses the image of a bird to represent which of the following?
- (1) a storm
  - (2) hope
  - (3) a song
  - (4) flight
  - (5) the soul

14. What advice would the speaker most likely give a friend who was going through a difficult time?
- (1) You should quit because things are too difficult and there is no hope left.
  - (2) You have to earn good things.
  - (3) You should not to give up hope, because it is there even when things are at their darkest.
  - (4) You should ask a professional for help if your problems are too much to handle.
  - (5) You should just ignore your problems and things will work themselves out.

15. In the third stanza, what is the poet’s message?
- (1) Hope needs at least a few crumbs of good behavior in order to stay alive.
  - (2) Since hope is an extreme emotion, it doesn’t last long.
  - (3) Although hope always stays with her, it never asks her for anything.
  - (4) Even though hope is everywhere, it does not help her.
  - (5) Hope has been lost in the far reaches of time and space.

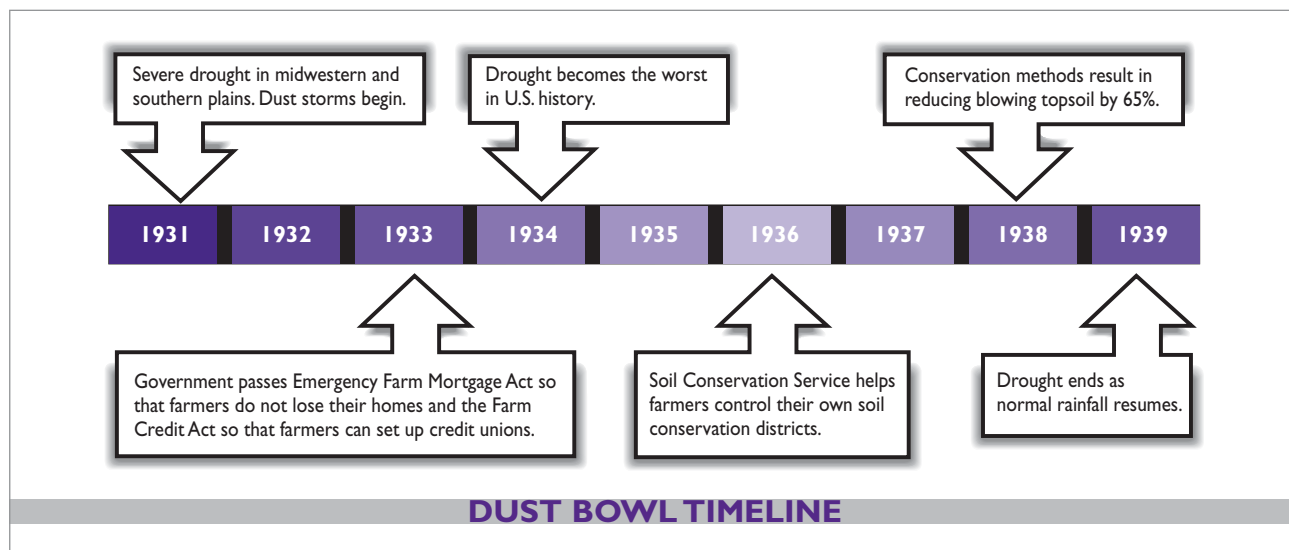
16. Which of the following is the theme of the poem?
- (1) Birds appear fragile, but they often survive terrible storms.
  - (2) Although hope appears fragile, it is strong and persistent.
  - (3) When all hope is lost, reach for any possible form of comfort.
  - (4) Even if everyone else has lost hope, you can still be strong.
  - (5) If you travel widely, you will see how people around the world live in hope.

**STOP**

# Social Studies Locator Test

Directions: Choose the one best answer to each question.

Questions 1 through 4 refer to the following timeline.



- Based on the Dust Bowl timeline, which of the following is most accurate?
  - Dust storms were primarily centered in the western plains.
  - The origin of the Dust Bowl was in the midwestern and southern plains.
  - Rainfall was plentiful in the eastern areas of the United States.
  - Dust storms were particularly severe on Sundays.
  - The drought was ended by soil conservation efforts.
- Which of the following statements best describes the relationship between the federal government and American farmers during the Dust Bowl period?
  - Farmers did not receive assistance from the federal government.
  - The federal government took over many farms and ran them for the farmers.
  - The federal government passed laws and started programs to assist farmers.
  - Farmers rejected government efforts to provide mortgage and credit assistance.
  - Farmers did not need assistance from the federal government.
- 1934's *Yearbook of Agriculture* estimated that more than 250 million acres of agricultural land in the United States had lost or were rapidly losing their topsoil.

Based on this information, you can conclude that topsoil

  - became the "dust" of the Dust Bowl
  - is unnecessary for agriculture
  - is probably not involved in dust storms
  - can be conserved with little effort
  - is not affected by drought
- Which of the following statements is an opinion, rather than a fact, related to the Dust Bowl period?
  - Thousands of people in drought-stricken areas abandoned their farms.
  - The Soil Conservation Service was formed to help stop erosion.
  - Conservation methods reduced the amount of blowing soil.
  - The government stopped banks from repossessing farms in affected areas.
  - It was the government's responsibility to save farmers from losing their homes.

Questions 5 through 8 refer to the following map.



5. Consider two facts about Panama: First, most of Panama's economic activity takes place in its service sector, including the Panama Canal, banking, and insurance industries. Second, more than half the population lives in the metropolitan area stretching from Panama City, on the Gulf of Panama, to Colón, on the Caribbean Sea.

Which of these statements best reflects the relationship between these two facts?

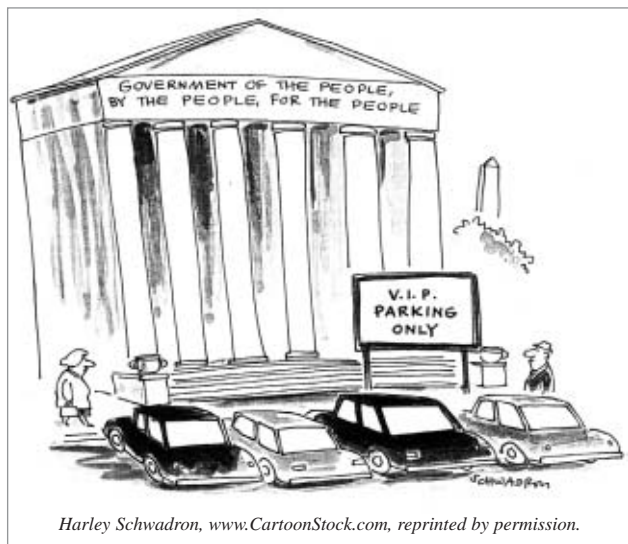
- (1) Most Panamanians prefer rural life.
  - (2) Panamanians would like to find jobs near the Pacific Ocean.
  - (3) Panamanians live where the jobs are.
  - (4) Panama's banking industry is on the decline.
  - (5) The smaller villages in Panama are often flooded by tropical storms.
6. How did the Panama Canal, completed in 1914, change international shipping?
- (1) It connected major cities in Panama.
  - (2) It created a route from the Caribbean Sea to the Pacific Ocean.
  - (3) It raised the water level in the Gulf of Panama.
  - (4) It allowed colonial Spanish explorers easier access to the New World.
  - (5) It was deep enough for only small vessels carrying light cargo.

7. Panama was invaded by Spain in the 16th century and was part of the Spanish Empire for 300 years. Panama then became a province of Colombia in 1821. In 1903, with the support of the United States, Panama became an independent nation. Panama then allowed the United States to build and control the Panama Canal.

Which of the following statements is supported by the paragraph above?

- (1) Panama has a long history of domination by the United States.
  - (2) Spain should not have tried to hold onto an international empire.
  - (3) Colombian governors tried to prevent the Panama Canal from being built.
  - (4) Panama was governed or influenced by foreign powers for centuries.
  - (5) Because of the Panama Canal, Panama could finally act independently.
8. Panama has a strong service economy. However, about 40 percent of its people live in poverty. Based on this information, you could conclude that Panama has too many
- (1) workers who lack specific job skills
  - (2) job applicants who are overqualified
  - (3) immigrants who take the best jobs
  - (4) companies going through layoffs
  - (5) full-time students relying on financial aid

Questions 9 through 11 are based on the editorial cartoon below.



9. What does the inscription on this building, "Government of the people, by the people, for the people," refer to?
- (1) a government headed by a committee
  - (2) a government ruled by a king or queen
  - (3) most members of the United Nations
  - (4) a government with no ruling body
  - (5) the government of the United States
10. What does the cartoonist most likely value?
- (1) strict rule by law and order
  - (2) being able to park close to the building where he works
  - (3) having ordinary people involved in politics
  - (4) the architecture of Washington, D.C.
  - (5) having highly educated people in charge of the government

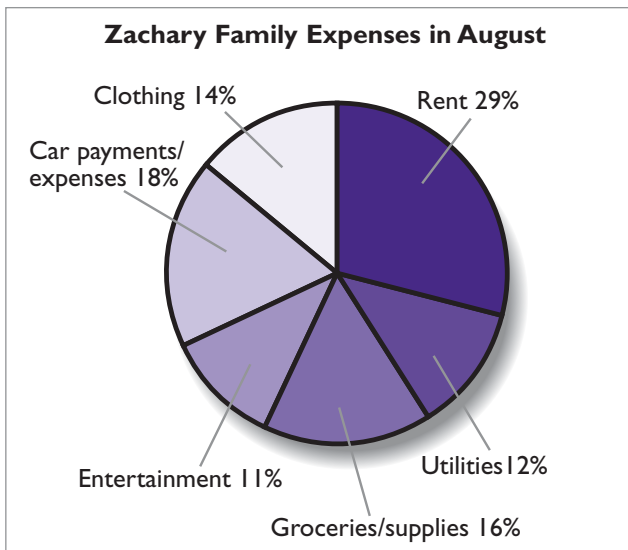
11. Imagine that this cartoonist is concerned about his local school district. He wants to make sure that everyone is involved in making decisions. Whose interests would he probably be most concerned about?
- (1) the principals and the school board
  - (2) the mayor and the town's governing body
  - (3) wealthy people who might give money to the schools
  - (4) the federal government
  - (5) the families served by the school district

12. The national government of the United States is based on the separation of powers among three branches:
- Executive—the President, the Cabinet, and other executive staff
  - Legislative—Congress, made up of the Senate and House of Representatives
  - Judicial—the court system, including the Supreme Court
- "Checks and balances" are built into our federal system so that each branch of government limits the power of the other branches.

Which of the following is an example of checks and balances?

- (1) The President is advised by members of the Cabinet.
- (2) The Supreme Court reviews a decision made by a lower court.
- (3) The House and Senate work out differences between two versions of a bill.
- (4) The Supreme Court declares that a law passed in Congress is unconstitutional.
- (5) Democrats and Republicans disagree about the level of funding for education.

Questions 13 through 15 are based on the graph below.



**13.** The Zachary family recorded all their spending for the month of August. According to the graph of their expenses, which of the following statements is true?

- (1) Rent accounts for nearly a third of their expenses.
- (2) The Zacharys need to stop spending so much money on rent.
- (3) Entertainment is a growing expense.
- (4) The Zacharys did not have to pay for car repairs in August.
- (5) The Zacharys should find a less expensive supermarket.

**14.** The Zacharys tracked their expenses again in September. They found that their clothing expenses in September declined to only 6% of their total expenses.

Which of the following statements is the most likely explanation for this change?

- (1) Clothing is less expensive in the fall.
- (2) Clothing is generally a predictable expense in a family budget.
- (3) Their children did not grow as quickly in September as they had in August.
- (4) Families often must buy clothes for their children in August before school starts.
- (5) Clothing prices went up, and the Zacharys avoided buying clothes.

**15.** Melina Zachary is thinking of buying a family entertainment coupon book for \$25. A friend of hers is selling the books on behalf of the local chamber of commerce. The friend tries to persuade Melina that the coupon book will help the Zacharys save money. The friend says the book is worth over \$100 in savings at local restaurants and movie theaters.

Which of the following factors should Melina take into account in deciding whether the coupon book will help her save money?

- (1) She should decide if she trusts the friend who is selling the coupon book.
- (2) She should tell her friends to support the businesses that have placed coupons in the book.
- (3) She should figure out whether using the coupons would decrease her family's entertainment expenses.
- (4) She should call the chamber of commerce to find out if they endorse the local businesses.
- (5) She should add up the coupons to make sure they are worth at least \$100.

**16.** A "market" is a system in which sellers negotiate the prices of their goods and services with buyers, and buyers make purchases from sellers. Markets generally have established routines that help buyers and sellers exchange information so that they can compete for each others' business.

Which of the following is an example of how markets work?

- (1) Nonprofit groups receive special goods from the government at a discount.
- (2) A manufacturer asks several vendors to provide price lists for raw materials.
- (3) College students volunteer to build houses for low-income families.
- (4) The federal government requires companies to file tax returns.
- (5) A company declares bankruptcy as a result of an expensive lawsuit.

**STOP**

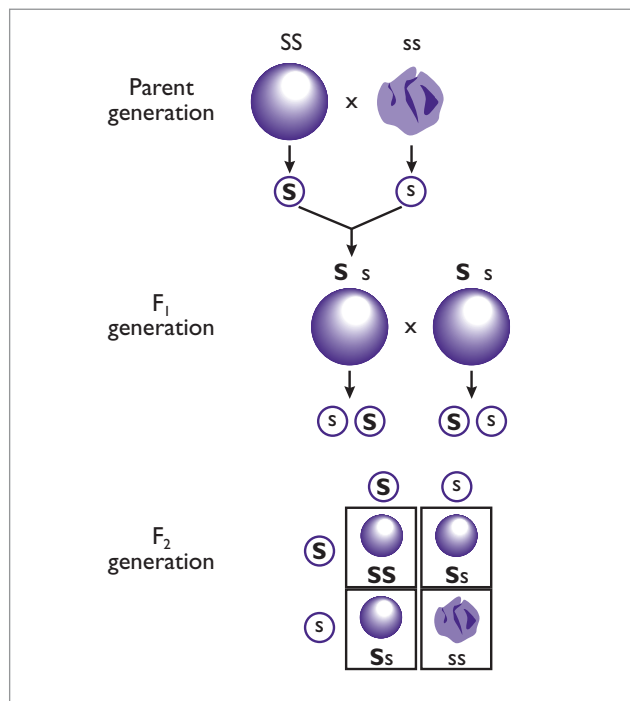
# Science Locator Test

**Directions: Choose the one best answer to each question.**

Questions 1 and 2 refer to the following information.

The diagram illustrates one of Gregor Mendel's experiments. Mendel's theory was that the traits of offspring are determined by genes contributed by the parent plants. He was able to prove that parents pass on characteristics to their offspring instead of blending the characteristics together.

In the parent plants, **SS** represents the *dominant* round seed and **ss** represents the *recessive* wrinkled seed. A seed will appear wrinkled only when both genes are recessive.



- When the parent generation has the genotypes **SS** and **ss**, which of the following is true of the F<sup>2</sup> generation?
  - All offspring have round seeds.
  - Most offspring have wrinkled seeds.
  - One-fourth of the offspring have wrinkled seeds.
  - All seeds are partly wrinkled.
  - One half of the offspring have round seeds.

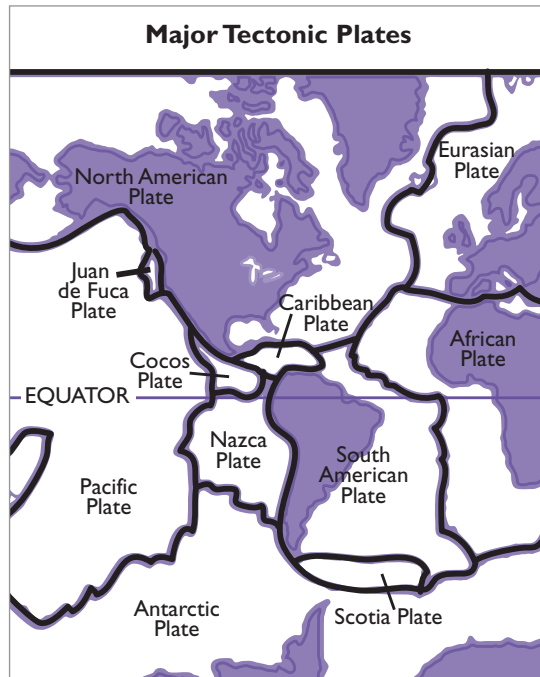
- Which of the following is an accurate statement about dominant traits?
  - mask or hide recessive traits
  - are more desirable than recessive traits
  - are always passed to the offspring
  - may lie hidden for generations
  - are expressed 50 percent of the time

Dominant traits

- After migrating to their winter habitat of fir trees on a few mountaintops in Mexico, hundreds of millions of monarch butterflies died of exposure in January 2002. Which of the following MOST LIKELY contributed to the mass die-off?
  - a change in their migratory route
  - the thinning of sheltering trees from illegal logging
  - exposure to a deadly predator
  - a movement to conserve their winter habitat
  - global warming in U.S. mountaintops
- Natural barriers such as oceans and mountains often prevent organisms from spreading to new locations. Which of the following is an example of an organism ending up in an unusual location?
  - Cottonwood seeds are carried many miles by the wind.
  - A black walnut is swept downstream and washed ashore.
  - An acorn is carried away and buried by a squirrel.
  - Berries are eaten by a bird and left in another location by droppings.
  - Asian longhorn beetles, hidden in tire shipments, arrive in the Midwest.

Questions 5 through 7 refer to the following map and information.

Earthquakes are caused by the movement of tectonic plates, which float on molten rock.



The boundaries between plates can be categorized in one of five ways:

**Subduction:** As the plates collide, one plate slides beneath another.

**Collision:** Neither plate subducts, and both push upwards.

**Accretion:** Small collisions form chunks of crust that are carried to new locations and fused to the landscape.

**Spreading:** Plates move away from each other, thinning the earth's crust and exposing molten rock.

**Transform:** Plates rub as they slide past each other laterally.

5. Which of the following plates borders the South American Plate?
- (1) Eurasian Plate
  - (2) Pacific Plate
  - (3) Juan de Fuca Plate
  - (4) African Plate
  - (5) Cocos Plate

6. The boundary of the Pacific Plate and North American Plate is the San Andreas fault in California. The land west of the fault is slowly moving to the northwest at a rate of 5 centimeters per year. The boundary between these plates is of what type?

- (1) Subduction
- (2) Collision
- (3) Accretion
- (4) Spreading
- (5) Transform

7. Volcanic islands are formed in the ocean when molten rock melts through the crust and lava pours out. These features are most often located on what type of boundary?

- (1) Subduction
- (2) Collision
- (3) Accretion
- (4) Spreading
- (5) Transform

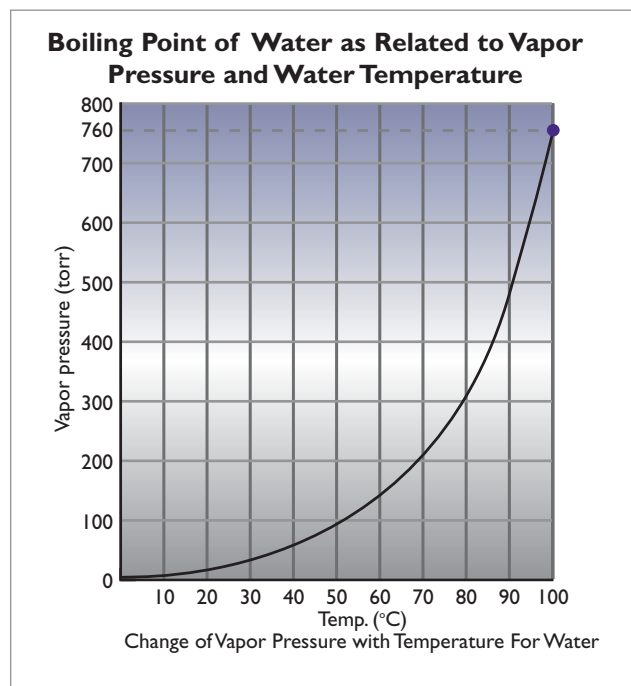
8. When Alfred Wegner proposed the theory of continental drift in 1912, his ideas were ridiculed, but evidence soon supported his thinking and the science of plate tectonics began.

Which of the following discoveries best supports the concept that the continents have moved?

- (1) Wind currents affect water currents.
- (2) The magnetic fields of rocks in Europe indicate that the rocks were formed south of the equator.
- (3) All the continents have mountain ranges.
- (4) Glaciers generally move away from the poles, leaving scars on landmasses.
- (5) The earth's magnetic field sometimes changes polarity.

Questions 9 and 10 are based on the following information.

A liquid begins to boil when its vapor pressure is equal to the surrounding air pressure. When the surrounding air pressure increases, the boiling point also increases. As shown on the graph, water boils at 100°C when the atmospheric pressure is 1 atmosphere or 760 torr (a unit of pressure).



9. In a pressure cooker, water can be made to boil at 120°C. By delaying the boiling point, food will cook faster at the higher temperature. Which of the following is the best explanation of how a pressure cooker works?

A pressure cooker

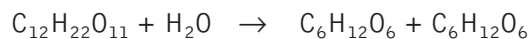
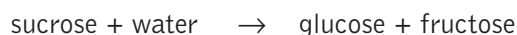
- (1) decreases the atmospheric pressure so that the water can boil more quickly
- (2) increases vapor and air pressure by locking in the water vapor
- (3) increases water temperature without changing vapor pressure
- (4) heightens vapor pressure without changing water temperature
- (5) reduces vapor pressure so that more heat is transferred to food

10. On a high mountain peak, the vapor pressure may be as little as 500 torr. If a climber attempts to boil water at this height, what will happen?

- (1) The water will boil at 100°C.
- (2) The water will not boil at an extreme height.
- (3) The water will boil at a temperature higher than 100°C.
- (4) The water will boil at about 90°C.
- (5) The water will begin boiling at 50°C.

Question 11 refers to the following information.

A cook uses a chemical reaction to make syrup. Sugars are made from carbon (C), hydrogen (H), and oxygen (O) atoms. When the sugar sucrose and water are in the presence of an acid, such as lemon juice, a chemical reaction changes the sucrose and water to the sweeter-tasting sugars glucose and fructose.

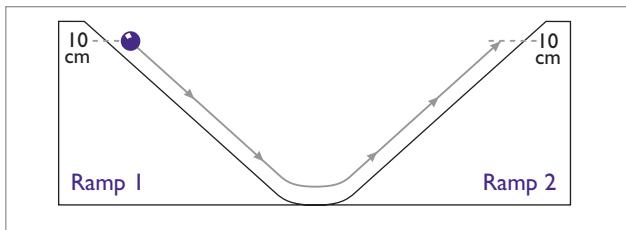


11. Which of the following is the best description of what happens to the water in this reaction?

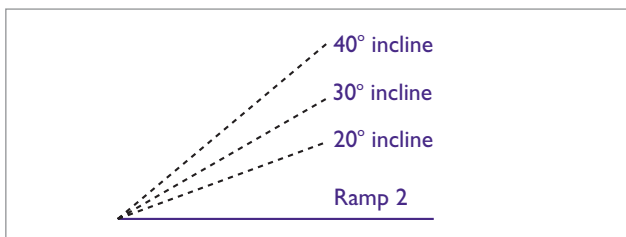
- (1) The water molecule mixes with and thins the sucrose.
- (2) The water is the acid that separates the sucrose into two new sugars.
- (3) The atoms of the water molecule become a chemical part of the new sugars.
- (4) The water molecule is destroyed by the larger sucrose compound.
- (5) The water evaporates as the sucrose is heated.

Questions 12 and 13 are based on the following information.

Galileo proved that if a marble is released at a certain height on Ramp 1, it would roll to that same height on Ramp 2 if there were no friction.



He continued his experiment by varying the angle of the second ramp. The angle of the first ramp did not change.



The data from three trials using actual ramps are given in the table below.

Height of Release on Ramp 1	Angle of Ramp 2	Height Reached on Ramp 2
20 cm	40°	19.4 cm
18 cm	30°	17.6 cm
25 cm	20°	24.2 cm

**12.** How do you account for the difference between the height of release and the height reached on Ramp 2?

- (1) The change in the angle of Ramp 2 slowed the marble.
- (2) Air pressure may have increased the angle of the ramp slightly.
- (3) As the marble rolls, it gives off heat.
- (4) The height of release was different for all three trials.
- (5) The marble's motion was changed by friction.

**13.** Suppose the angle of Ramp 2 is 0°. In other words, Ramp 2 is flat, with no incline. In a frictionless world, what would happen to the marble if it were released on Ramp 1 at a height of 10 centimeters?

- (1) The marble would continue to roll forever unless an outside force acted upon it.
- (2) The marble would roll for 10 centimeters and come to a stop.
- (3) The marble would begin to increase in speed when it reached the point where the second incline should be.
- (4) The marble would gradually slow down, but it would never completely stop.
- (5) The marble would roll a distance equal to ten times the height of release.

**14.** Newton's First Law of Motion states that an object in motion will continue in motion and an object at rest will stay at rest unless the object is acted upon by an outside force. Which of the following demonstrates this law at work?

- (1) You step from a boat onto the dock, and the boat moves away from you.
- (2) While pushing a stalled car, your feet slip and you fall back.
- (3) Water begins to swirl as it flows down the bathtub drain.
- (4) When a car stops suddenly, the passengers are thrown forward.
- (5) A baseball player hurts his hands while hitting a ball with a bat.

**STOP**

# Mathematics Locator Test

Directions: Choose the one best answer to each question.

1. Mike went to an office supply store to buy toner cartridges. He paid \$312 for a package of four cartridges. What was the cost per cartridge?

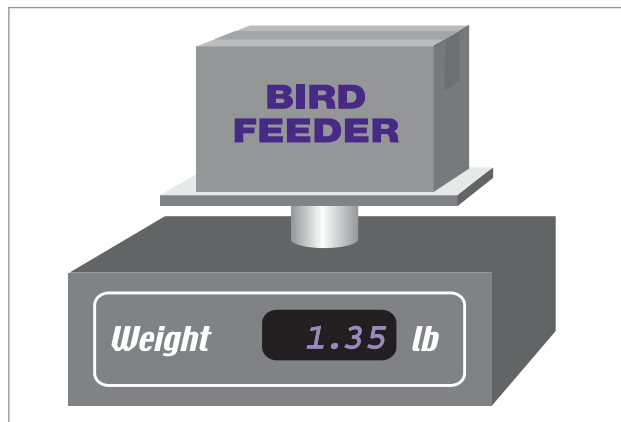
- (1) \$28
- (2) \$32
- (3) \$73
- (4) \$78
- (5) \$83

2. Alicia makes deliveries three days a week. The table below shows the number of hours Alicia worked in one week. If she earns \$9 per hour, which of the following expressions could be used to find her earnings for the week?

Day	Hours
Tuesday	6
Thursday	5
Saturday	7

- (1)  $(6 + 5 + 7) \div 3$
  - (2)  $(6 + 5 + 7) \div \$9$
  - (3)  $6 + 5 + 7 + \$9$
  - (4)  $\$9 \times 6 + 5 + 7$
  - (5)  $\$9 \times (6 + 5 + 7)$
3. David bought a pair of running shoes for \$47.42. He paid with three \$20 bills. How much change did he receive?
- (1) \$12.58
  - (2) \$12.68
  - (3) \$13.58
  - (4) \$13.42
  - (5) \$27.42

Question 4 refers to the following information.



4. A garden store ordered two dozen bird feeders. The weight of one bird feeder is shown on the scale above. What would be the weight in pounds of two dozen bird feeders?

- (1) 2.7
- (2) 16.2
- (3) 25.35
- (4) 32.4
- (5) 194.4

5. Bob ran  $2\frac{1}{5}$  miles on Saturday,  $3\frac{9}{10}$  miles on Sunday, and  $1\frac{1}{2}$  miles on Monday. How many miles did he run in all for the three days?

- (1)  $6\frac{9}{100}$
- (2)  $6\frac{3}{5}$
- (3)  $6\frac{11}{17}$
- (4)  $7\frac{1}{2}$
- (5)  $7\frac{3}{5}$

6. Patricia works as a tailor. A dress pattern calls for  $5\frac{5}{8}$  yards of fabric. How many yards of fabric will Patricia need to make four dresses?
- (1)  $22\frac{1}{2}$
  - (2)  $21\frac{1}{8}$
  - (3)  $20\frac{5}{8}$
  - (4)  $20\frac{5}{32}$
  - (5)  $9\frac{5}{8}$
7. Nita has 20 cups of sugar. She plans to make a cookie recipe that calls for  $1\frac{2}{3}$  cups of sugar. How many batches of cookies can she make from the sugar she has?
- (1) 10
  - (2) 12
  - (3) 16
  - (4) 30
  - (5) 33
9. A soft-drink company is conducting a taste test for a new product. The company gives 50 customers a sample of its new lime cola. Of those, only 20 like the taste. Next, the company plans to offer the drink to 400 customers. If the rate is the same, which of the following expressions could be used to find how many are likely to like the new drink?
- (1)  $\frac{20 \times 50}{400}$
  - (2)  $\frac{400}{20 \times 50}$
  - (3)  $\frac{20 \times 400}{50}$
  - (4)  $\frac{50 \times 400}{20}$
  - (5)  $\frac{50}{20 \times 400}$

Question 8 refers to the following information.

Marie's Diner Number of Customers on Sunday	
Meal	Number of Customers
Breakfast	20
Lunch	28
Dinner	64

8. What is the ratio of breakfast and lunch customers combined to dinner customers?
- (1) 3 to 4
  - (2) 3 to 7
  - (3) 5 to 7
  - (4) 5 to 16
  - (5) 7 to 16
10. Kendra plans to buy a coat that was regularly priced at \$146. How much will she save if she buys the coat at the sale price?
- (1) \$30.00
  - (2) \$43.80
  - (3) \$58.40
  - (4) \$102.20
  - (5) \$116.00

Question 10 refers to the following information.



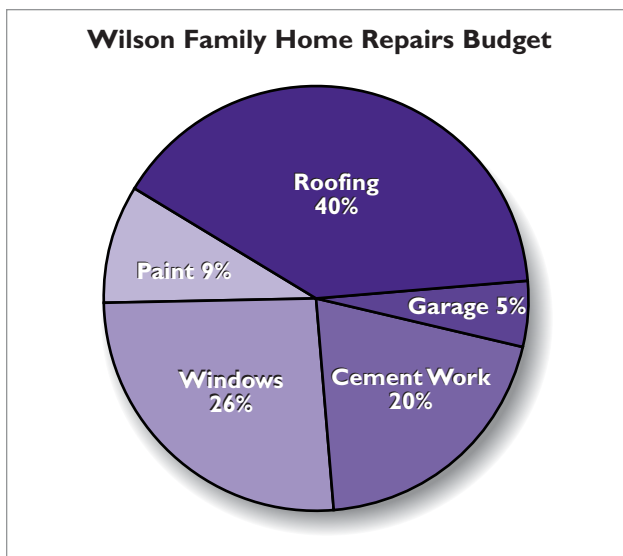
11. Using a tape measure, Hank finds that the width of his closet is 78 inches. How would you write the distance in feet?

- (1) 6
- (2)  $6\frac{1}{2}$
- (3)  $7\frac{1}{2}$
- (4)  $7\frac{3}{4}$
- (5) 26

12. A wooden dowel is 1.7 meters long. If you cut off 80 centimeters, what is the length of the remaining piece in centimeters?

- (1) 9
- (2) 63
- (3) 78.3
- (4) 90
- (5) 1,620

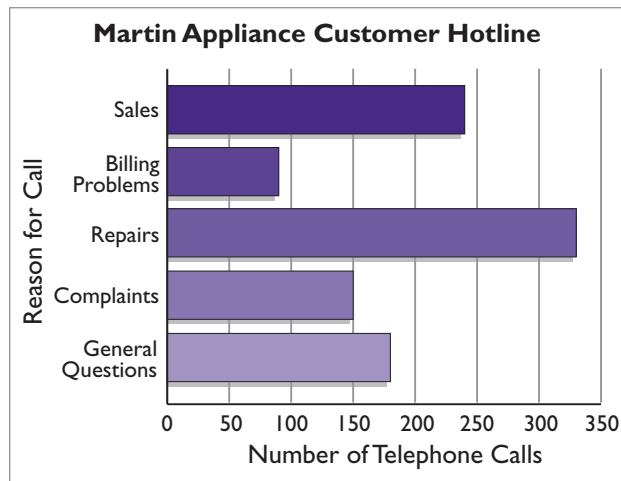
Question 13 refers to the following graph.



13. The Wilsons recently borrowed \$15,000 to make repairs on their home. The graph shows how they plan to spend the money. On which item will they spend about  $\frac{1}{4}$  of the money?

- (1) paint
- (2) roofing
- (3) windows
- (4) cement work
- (5) garage

Question 14 refers to the following graph.



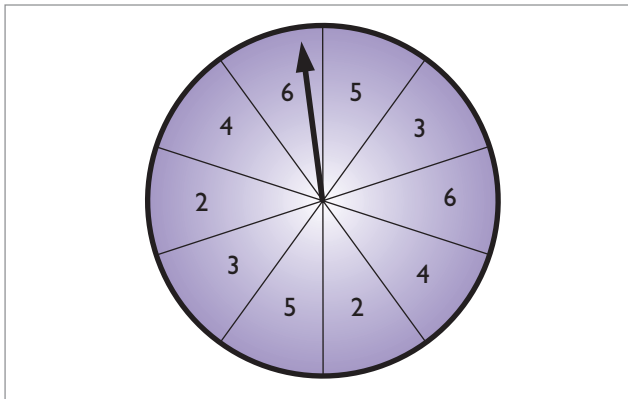
14. When a customer calls Martin Appliance, the company keeps track of the reason for the call. Which of the following is a true statement about the data shown on the graph?

- (1) There were more complaints than sales calls.
- (2) There were three times as many repair calls as complaints.
- (3) About half the calls were general questions.
- (4) There were fewer than 100 calls about billing problems.
- (5) More than 50 percent of the calls were sales calls.

15. Last week Grace played in a golf tournament. Her scores for the four-day event were 84, 77, 93, and 90. What was her average score for the tournament?

- (1) 87
- (2) 86
- (3) 85
- (4) 84
- (5) 77

16. A spinner has ten equal sections as shown below.



What is the chance of spinning a number greater than 3?

- (1) 20%
- (2) 40%
- (3) 60%
- (4) 80%
- (5) 90%

17. Keesha earns \$75 less than twice Jeff’s monthly salary. If Jeff’s salary is represented by  $x$ , which of the following expressions represents Keesha’s salary?

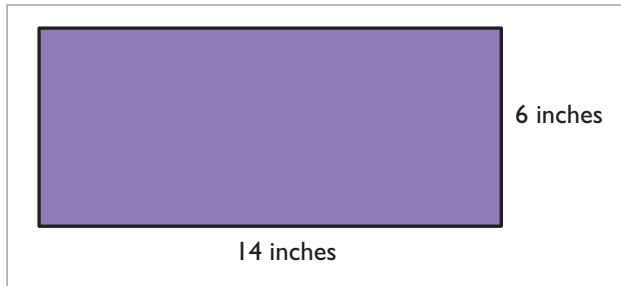
- (1)  $2x - \$75$
- (2)  $2(x - \$75)$
- (3)  $x(2x - \$75)$
- (4)  $x + 2(\$75)$
- (5)  $2x + \$75$

18. What is the value of  $x$  in the following equation?

$$6x + 4 = 60 - 2x$$

- (1) 6
- (2) 7
- (3) 8
- (4) 12
- (5) 14

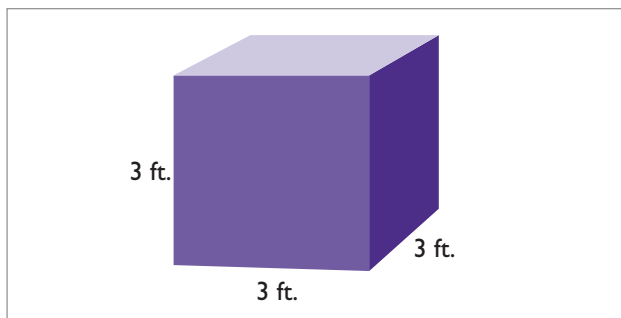
Question 19 refers to the figure below.



19. What is the area, in square inches, of the rectangle?

- (1) 20
- (2) 36
- (3) 40
- (4) 84
- (5) 196

20. The shipping crate below is in the shape of a cube.



What is the volume of the cube in cubic feet? You may use the formula:

$$\text{Volume of a cube} = \text{edge}^3$$

- (1) 3
- (2) 9
- (3) 27
- (4) 36
- (5) 81

**STOP**