

Pretest

Directions: Read the passage and follow the directions for problems 1 and 2.

Jessa was known for her idiosyncrasies, of which she had many. For example, her preference for spending time alone instead of with other teens did not endear her to her peers. Neither did her questionable fashion choices and her obsession with vintage technology like manual typewriters and rotary phones from the 1900s. In fact, her eccentricities made it easy for her peers to ostracize her. She wouldn't have minded, really, if they had just left her alone in peace. Instead, they made her a target of their public ridicule, which only served to drive her further into isolation.

All that changed one day when Jessa saw a girl sulking in the botanical park where she liked to walk. Sulking was putting it mildly; the expression on this girl's face warned, "Leave me alone or prepare for battle." Never a fan of interaction, Jessa would have gladly heeded the warning if not for the antique folding camera the girl was setting up near the pond. Jessa had never seen the device in person and simply could not disregard her curiosity.

She approached the strange girl slowly, admiring the eclectic mix of vintage clothing and accessories she sported. "Is that a Model 22 miniature camera?" she asked timidly.

The girl looked up in shock. "How did you know that?"

Jessa smiled. "I'm a connoisseur of 19th- and 20th-century gadgets. I'm amazed you have film for that machine. I thought the unperforated film was nonexistent."

The girl said, "It is getting very difficult to purchase, but this is the last roll from my grandmother's stash." Sorrow overwhelmed the girl's face, and Jessa experienced the unfamiliar feeling of having a connection to a stranger.

"You must miss your grandmother a lot. I understand because I inherited my love of everything vintage from my grandfather. I'm Jessa, by the way."

The girl smiled shyly and said, "I'm Alex. Want to take a picture together?"

1a. How does the main character change during this experience?

- (A) She desires a friendship with someone her age.
- (B) She develops an interest in vintage technology.
- (C) She begins to appreciate her grandparents.
- (D) She learns to use a miniature camera.

Pretest (cont.)

1b. Use evidence from the text to support your answer in 1a.

2a. What is the meaning of the word *idiosyncrasies* as used in the passage?

- (A) quirks
- (B) bad habits
- (C) character flaws
- (D) lapses in judgment

2b. What context clues did you use to determine the answer in 2a?

3. Which of the following words has the most positive connotation?

- (A) domineering
- (B) overbearing
- (C) aggressive
- (D) assertive

4. Rewrite this sentence using correct spelling, capitalization, and punctuation:

The students grades has been declining so their teacher asigns extra homework to improve they're understanding

Pretest (cont.)

Directions: Read the passage and follow the directions for problems 5 and 6.

The Sargasso Sea is a region of relatively calm waters in the northern Atlantic Ocean. It is bounded not by landmasses, as most seas are defined, but by four ocean currents. Its name is derived from the millions of square miles of sargassum seaweed that amass in the region. To observers, this floating brown algae mat may appear devoid of life, but in fact, many ocean creatures depend on this habitat at one or more points in their life cycle.

The region is a spawning ground for fish like flying fish that lay eggs in the seaweed bed. These eggs and the seaweed itself are food sources for many animals. Two species of endangered eels are known to breed only in the Sargasso Sea—a European eel and an American eel. It is also a crucial part of the migratory paths of several tuna fish species, birds, whales, and sharks.

Some young ocean animals use the Sargasso Sea as a nursery of sorts. At least four varieties of sea turtle hatchlings born on Atlantic Ocean beaches make the arduous journey to the seaweed habitat, where they spend their “lost years.” This phrase refers to the turtles’ juvenile years, about which much is unknown to researchers. Here, these fragile hatchlings can safely hide from an ocean full of predators.

Some ocean species live their entire lives in the Sargasso Sea and are endemic to the region. Many of these derive their names from the seaweed on which they depend. This includes the Sargassum angler fish, the Sargassum snail, and the Sargassum shrimp. Unsurprisingly, their appearances usually mimic the golden-brown algae in which they take shelter.

Although great numbers of researchers add to our growing body of knowledge about this most unusual of Earth’s seas, much remains to be discovered. One thing that is known for sure, though, is that the Sargasso Sea is a thriving and crucial habitat for hundreds of ocean species.

5. What was most likely the author’s purpose in writing this text?
- (A) to encourage people to visit and explore the Sargasso Sea
 - (B) to convince people to protect the Sargasso Sea from pollution
 - (C) to explain the history of human exploration of the Sargasso Sea
 - (D) to provide an overview of the species that depend on the Sargasso Sea

Pretest (cont.)

6. Summarize the passage in 2–3 sentences.

7. Which of these are sentence fragments? Mark all that apply.

- (A) Keep up the good work
- (B) I should mind my own business
- (C) The sun setting slowly in the west
- (D) Would you like your food in a bag
- (E) Bees buzzing all around my head in warning
- (F) How many times have I asked him not to do that
- (G) The book on the top shelf with the lavender cover
- (H) Signing my name to this letter is a courageous act
- (I) Take a left at the second intersection and then go straight

8a. Which figure of speech appears in this sentence?

Her granddaughter’s laughter was the cure for all that ailed her.

- (A) hyperbole
- (B) metaphor
- (C) onomatopoeia
- (D) personification

8b. Write an original sentence that uses an idiom.

Pretest (cont.)

9. Which sentence uses the most formal language?

- (A) Environmental conservation is crucial for the future.
- (B) We've got to stop polluting the environment right now.
- (C) Humans don't do a very good job of protecting the planet.
- (D) I believe we've got to step up and care for the environment.

10a. Which three sentences require a hyphen?

- (A) Up close, the building was a tall imposing structure.
- (B) His part time job helps him afford all the travel he does.
- (C) Finding a low cost college option is not easy these days.
- (D) The delicate white flowers on her dress remind me of daisies.
- (E) The patio is made from a fire resistant material, so a fire pit is allowed.
- (F) Aging musical instruments play just as well as newer ones that were just bought.

10b. Write an original sentence that uses a hyphen correctly.

11. Simplify each expression.

11a. $(5xy^2 + 2x^2y - 2xy) + (4xy + 6x^2y - 7xy^2) =$ _____

11b. $(7g - 12h + 12k) - (4k - 10h + g) =$ _____

11c. $(4k - 6m)(3k - 2m) =$ _____

12. Solve for each variable.

12a. $|4m + 8| = 12$ $m =$ _____ and $m =$ _____

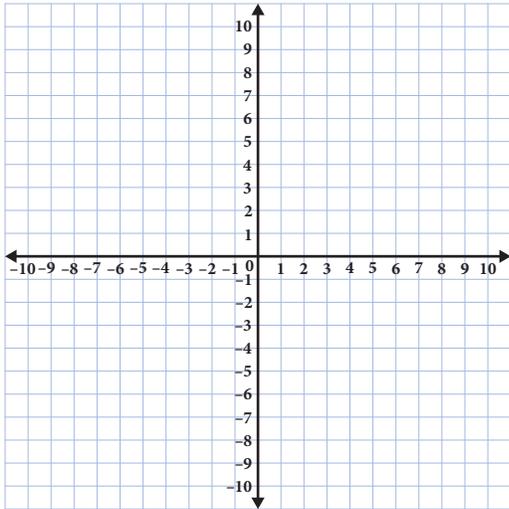
12b. $-2|2v - 6| = -24$ $v =$ _____ and $v =$ _____

12c. $3|k + 4| - 12 = 12$ $k =$ _____ and $k =$ _____

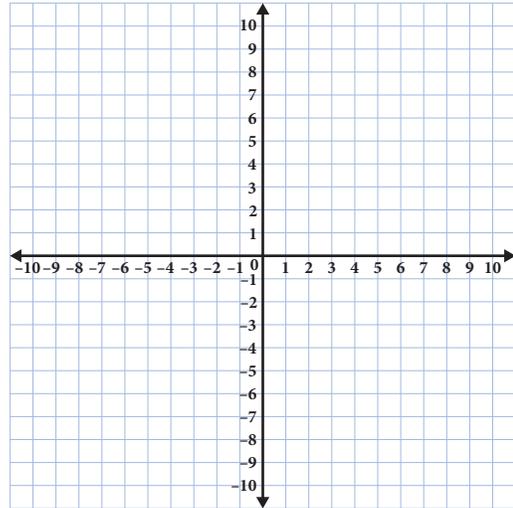
Pretest (cont.)

13. Graph each absolute value function on the coordinate plane.

13a. $f(x) = |x + 2| - 5$



13b. $f(x) = -2|x - 1| + 6$



14. The table shows the amount of money that Sadie, Azlinn, and Nora saved over the last 6 weeks.

Sadie	\$125	\$85	\$105	\$125	\$110	\$75
Azlinn	\$75	\$90	\$150	\$180	\$110	\$95
Nora	\$80	\$80	\$80	\$125	\$80	\$75

14a. Who has the lowest mean number of dollars saved per week? _____

14b. Who has the largest range in dollars saved per week? _____

14c. How much greater is the median of Sadie's dollars saved per week than Azlinn's median dollars saved per week? _____

15. Find the slope of a line that is parallel and perpendicular to each linear equation.

15a. $y = -4x + 6$

Slope of a line parallel to $y = -4x + 6$: _____

Slope of a line perpendicular to $y = -4x + 6$: _____

15b. $2x - 6y = -18$

Slope of a line parallel to $2x - 6y = -18$: _____

Slope of a line perpendicular to $2x - 6y = -18$: _____

Pretest (cont.)

16. Write the linear equation, in slope intercept form, that has the stated slope and passes through the given point.

16a. Slope: 4; Passes through (-2, 6) $y =$ _____

16b. Slope: -2; Passes through (5, -1) $y =$ _____

16c. Slope: -5; Passes through (-3, 5) $y =$ _____

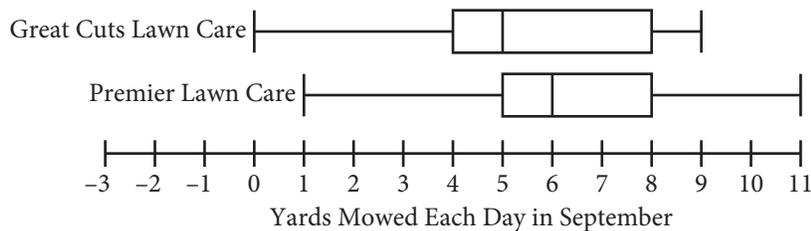
17. Find the vertex of each quadratic function.

17a. $f(x) = (x - 6)^2 + 2$ _____

17b. $f(x) = 2(x + 3)^2 - 6$ _____

17c. $f(x) = \frac{1}{4}(x - 2)^2 - 4$ _____

18. The box plot shows the number of yards mowed each day by two different lawn care companies.



18a. Which lawn care company's data has the largest median? _____

18b. How much smaller is the range of Premier Lawn Care's data than the range of Great Cuts Lawn Care's data? _____

18c. What percentage of Premier Lawn Care's days did they mow at least 5 yards per day? _____%

19. Write the exponential function that represents each scenario.

19a. Cal deposited \$500 in an account and the value of the account increases by 3% each year, x .

$f(x) =$ _____

19b. The purchase price of a new watch is \$1,500 and the value of the watch decreases by 7% per year, x .

$f(x) =$ _____

Pretest (cont.)

20. Find the distance between the given points and then find the midpoint. Round decimals to the nearest tenth.

20a. $(3, -6)$ and $(5, -2)$

Distance: _____ units

Midpoint: $(\underline{\quad}, \underline{\quad})$

20b. $(-3, 7)$ and $(1, -1)$

Distance: _____ units

Midpoint: $(\underline{\quad}, \underline{\quad})$

Posttest

Directions: Read the passage and follow the directions for problems 1 and 2.

In a matter of months, Max would be the fourth generation in the O'Reilly family to attend the most prestigious college in the United States. Wellington University was foremost on every college-bound student's list, and the competition was ferocious. Fewer than twelve percent of the applicants were accepted each year.

For the last three months, Max's parents had been anxiously pestering him to submit his application. "If you miss the Early Decision window, you won't be admitted," they would nag. Max had a laissez-faire attitude about his admission to Wellington. His family's legacy was a guarantee of admission because the O'Reillys had been President's Club donors for decades.

"It will all work out," he would say dismissively.

Shortly after Christmas, Max reluctantly worked up the willpower to begin his application. The admissions page on the Wellington website greeted him with unwelcome news; all positions for the incoming freshman class were filled. It was a setback, but he knew there was a different process for certain people. He just needed Granddad to make a couple of phone calls.

"I'm sorry, Max," his mom announced a few days later. "There's no one else for Granddad to call. It's just too late."

Max was flabbergasted. "What am I supposed to do now?"

"Well," his mother said, "You always say things will all work out. Let's trust that this will all work out too."

Four years later, Max and all his closest college friends posed together for photographs after their graduation from the small state college where Max had been accepted. He was so appreciative of experiences they had shared over the last four years and the enduring friendships they had forged. He didn't regret missing out on Wellington one iota.

1a. How does the main character change during this experience?

- (A) He learns that attending Wellington is not as important as he thought.
- (B) He learns that having an influential family makes life easier for people.
- (C) He learns that there are other options besides college after high school.
- (D) He learns to take pride in continuing his family's academic legacy at Wellington.

Posttest (cont.)

1b. Use evidence from the text to support your answer in 1a.

2a. What is the meaning of the word *prestigious* as used in the passage?

- (A) famous
- (B) expensive
- (C) highly respected
- (D) academically rigorous

2b. What context clues did you use to determine the answer in 2a?

3. Which of the following words has the most positive connotation?

- (A) persistent
- (B) obstinate
- (C) stubborn
- (D) inflexible

4. Rewrite this sentence using correct spelling, capitalization, and punctuation:

The novels protagonist whose name is not mentoined was a bussinesman from indianapolis indiana

Posttest (cont.)

Directions: Read the passage and follow the directions for problems 5 and 6.

The National Aeronautics and Space Administration, better known as NASA, has announced plans to build houses on the moon within the next twenty years. Incredible as it may sound, NASA intends to complete this mission with the aid of a 3D printer that will be sent from Earth to the moon's surface.

The 3D printer is a more affordable option than carrying heavy building supplies over 200,000 miles (over 321,000 kilometers). This would require many spacecrafts that each require massive amounts of fuel. By contrast, the printer can be delivered in just one trip. Printing moon homes from moon materials is also safer than introducing materials from Earth to the moon's surface. No one knows how Earth's materials would withstand the moon's radiation and temperatures. However, mixing lunar soil, rocks, and other moon resources to create a type of lunar concrete should avoid these risks.

Humans have not been on the moon in more than 50 years. It is hard to imagine that in less than 20 years, people could be living on this satellite that only a dozen humans have ever set foot on. But NASA's plan to make this a reality is already underway.

5. What was most likely the author's purpose in writing this text?
- (A) to summarize NASA's plan to use a 3D printer to build lunar homes
 - (B) to discuss the environmental consequences of inhabiting the moon
 - (C) to compare the process of building in space to the same process on Earth
 - (D) to analyze NASA's timeline for making permanent moon settlements possible
6. Summarize the passage in 2–3 sentences.

Posttest (cont.)

7. Which of these are sentence fragments? Mark all that apply.

- (A) Take a few deep breaths
- (B) Let's try it your way for once
- (C) Possible storms tomorrow night
- (D) If I can muster the courage, I will
- (E) The rabbit eyeing me suspiciously
- (F) So much pressure to get good grades
- (G) Brainstorming every possible solution
- (H) Taking the easy way out all the time feels terrible
- (I) Unfortunately, he knows about the surprise party

8a. Which figure of speech appears in this sentence?

The stars danced across the night sky as the evening continued.

- (A) hyperbole
- (B) metaphor
- (C) onomatopoeia
- (D) personification

8b. Write an original sentence that uses an idiom.

9. Which sentence uses the most formal language?

- (A) Smartphones aren't good for children.
- (B) I think smartphones are horrible for children.
- (C) Smartphones may have negative effects on children.
- (D) Kids shouldn't use smartphones till they are teenagers.

Posttest (cont.)

10a. Which three sentences require a hyphen?

- (A) I expect you to follow the agreed upon rules at all times.
- (B) This large scale project is going to take several weeks.
- (C) He doesn't have a long term strategy beyond graduation yet.
- (D) That is the fourth city bus I have seen go by since early morning.
- (E) The swimming pool hours were clearly posted on the fence by the gate.
- (F) The gnarled tree in my back yard needs to be removed by a professional arborist.

10b. Write an original sentence that uses a hyphen correctly.

11. Simplify each expression.

11a. $(3mn - 7m^2n + 2mn^2) + (-5mn^2 + 4m^2n + 2mn) =$ _____

11b. $(-2x + 3y - 10z) - (4y - 6z + 8x) =$ _____

11c. $(3a + 2b)(4a - 3b) =$ _____

12. Solve for each variable.

12a. $|2c - 6| = 2$ $c =$ _____ and $c =$ _____

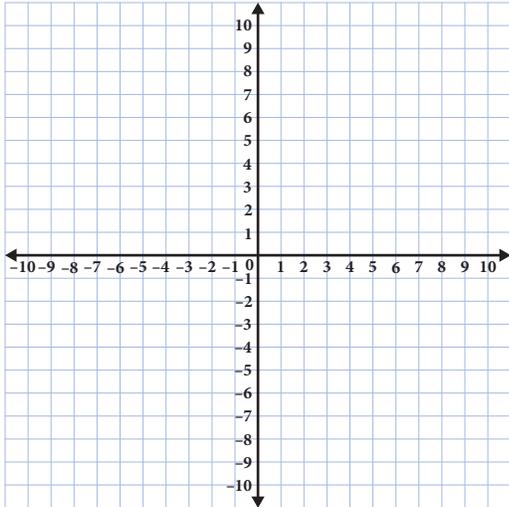
12b. $-4|3w + 6| = -12$ $w =$ _____ and $w =$ _____

12c. $5|v - 2| + 27 = 32$ $v =$ _____ and $v =$ _____

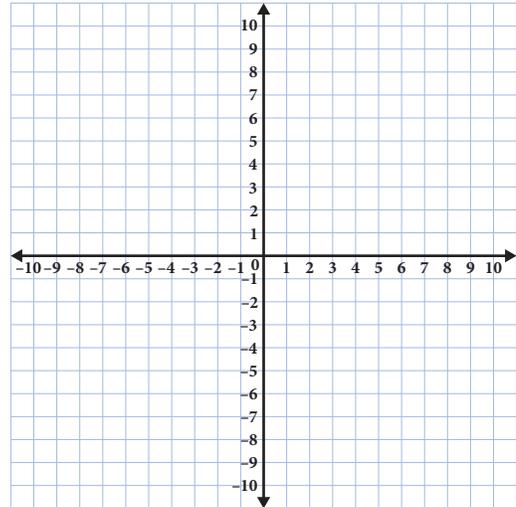
Posttest (cont.)

13. Graph each absolute value function on the coordinate plane.

13a. $f(x) = |x - 1| + 3$



13b. $f(x) = -4|x + 1| + 8$



14. The table shows the number of points that 3 different football teams have scored each week, over the first 7 games of the year.

Orange	14	21	3	28	28	17	0
Blue	24	24	24	7	6	14	28
Red	28	35	21	24	3	10	13

- 14a. Who has the largest mean number of points scored per game? _____
- 14b. Who has the largest median number of points per game? _____
- 14c. How much greater is the range of the Red team's data than the range of the Orange team's data? _____
15. Find the slope of a line that is parallel and perpendicular to each linear equation.

15a. $y = 3x - 4$

Slope of a line parallel to $y = 3x - 4$: _____

Slope of a line perpendicular to $y = 3x - 4$: _____

15b. $-6x - 12y = -12$

Slope of a line parallel to $-6x - 12y = -12$: _____

Slope of a line perpendicular to $-6x - 12y = -12$: _____

Posttest (cont.)

16. Write the linear equation, in slope intercept form, that has the stated slope and passes through the given point.

16a. Slope: -3 ; Passes through $(4, 1)$ $y =$ _____

16b. Slope: 6 ; Passes through $(2, -4)$ $y =$ _____

16c. Slope: -2 ; Passes through $(-5, 3)$ $y =$ _____

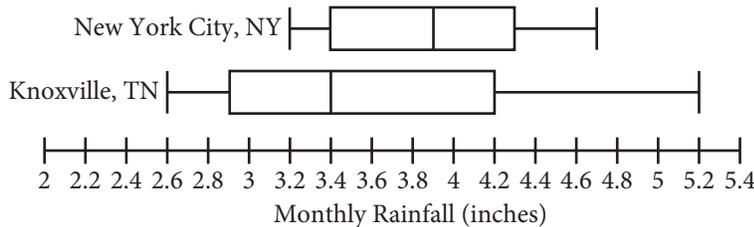
17. Find the vertex of each quadratic function.

17a. $f(x) = (x - 9)^2 - 1$ _____

17b. $f(x) = -(x - 5)^2 + 6$ _____

17c. $f(x) = \frac{3}{4}(x + 5)^2 - 1$ _____

18. The box plot shows the average monthly rainfall, in inches, of Knoxville, Tennessee, and New York City, New York, each month last year.



18a. Which city's data had the smallest median? _____

18b. How much greater is the range of Knoxville's data than New York City's data? _____

18c. What percentage of New York City's months get between 3.2 and 3.4 inches of rain? _____ %

19. Write the exponential function that represents each scenario.

19a. Reid purchased new tires for his truck. The tires have a tread depth of 0.7 inches, and it is estimated that the tread depth decreases by 3% each month, x .

$f(x) =$ _____

19b. A share of a company's stock began the year at \$12.75 and the price increased by 6% each month, x .

$f(x) =$ _____

Posttest (cont.)

20. Find the distance between the given points and then find the midpoint. Round decimals to the nearest tenth.

20a. $(-1, 6)$ and $(3, 8)$

Distance: _____ units

Midpoint: $(\underline{\quad}, \underline{\quad})$

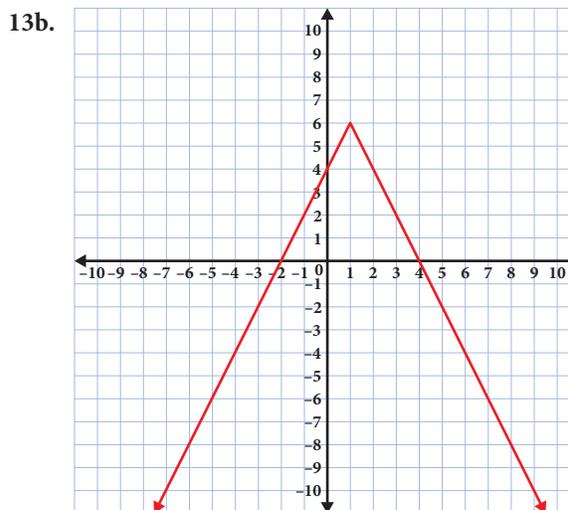
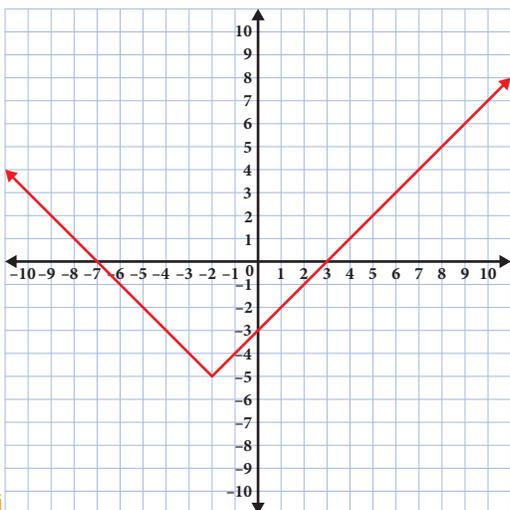
20b. $(8, -2)$ and $(-2, 6)$

Distance: _____ units

Midpoint: $(\underline{\quad}, \underline{\quad})$

Pretest Answer Key

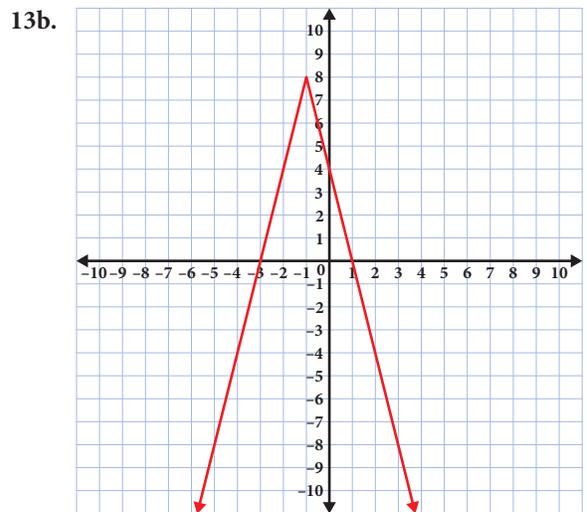
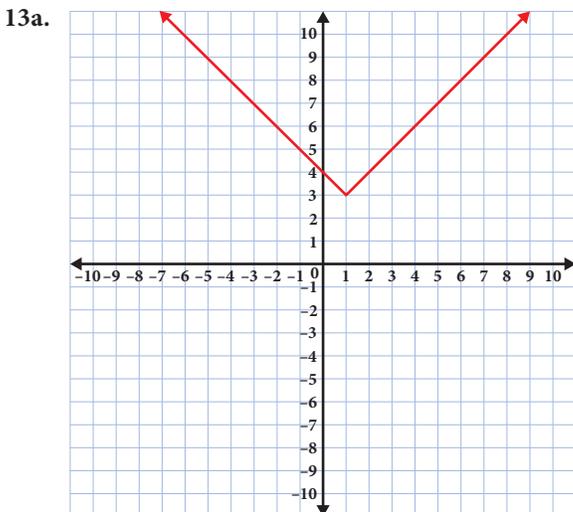
- 1a. A
- 1b. The text says that Jessa would be happy if her peers would just leave her alone and that she prefers to spend time alone, indicating that she has no desire for friendship. By the end of the text, though, she is introducing herself to Alex, which strongly indicates that she desires to get to know her.
- 2a. A
- 2b. The first paragraph of the text lists a set of unusual traits and interests, calling them *eccentricities*. This word is a close synonym for *quirks*.
3. D
4. The students' grades have been declining, so their teacher assigns extra homework to improve their understanding.
5. D
6. The Sargasso Sea is a unique area of the Atlantic Ocean where an enormous mass of floating seaweed plays a critical role in the life cycle of various ocean animals. Some of these animals include fish, sharks, whales, sea turtles, and birds.
7. C, E, G
- 8a. B
- 8b. Sample answer:
My best friend hit the nail on the head when she said I am an introvert.
9. A
- 10a. B, C, E
- 10b. Sample answer:
I didn't want to show up for the party empty-handed, so I brought flowers.
- 11a. $-2xy^2 + 8x^2y + 2xy$
- 11b. $6g - 2h + 8k$
- 11c. $12k^2 - 26km + 12m^2$
- 12a. $m = -5$ and $m = 1$
- 12b. $v = -3$ and $v = 9$
- 12c. $k = -12$ and $k = 4$
- 13a.



- 14a. Nora
- 14b. Azlinn
- 14c. 5
- 15a. Parallel: -4
Perpendicular: $\frac{1}{4}$
- 15b. Parallel: $\frac{1}{3}$
Perpendicular: -3
- 16a. $y = 4x + 14$
- 16b. $y = -2x + 9$
- 16c. $y = -5x - 10$
- 17a. $(6, 2)$
- 17b. $(-3, -6)$
- 17c. $(2, -4)$
- 18a. Premier Lawn Care
- 18b. 1
- 18c. 75%
- 19a. $f(x) = 500(1.03)^x$
- 19b. $f(x) = 1,500(0.93)^x$
- 20a. Distance: 4.8 units
Midpoint: $(4, -4)$
- 20b. Distance: 8.9 units
Midpoint: $(-1, 3)$

Posttest Answer Key

- 1a. A
- 1b. After Max doesn't get into Wellington, he attends a small state college and graduates four years later with a great group of friends, which shows that attending Wellington was not as important as he thought it would be.
- 2a. C
- 2b. The sentence after the word appears is a context clue; it explains that every student wants to attend Wellington. Thus, it must be highly regarded.
3. A
4. The novel's protagonist, whose name is not mentioned, was a businessman from Indianapolis, Indiana.
5. A
6. NASA plans to build a permanent human settlement on the moon within the next 20 years. It will accomplish this goal with the aid of a 3D printer that can use moon materials to create concrete-like houses in which people can live.
7. C, E, F, G
- 8a. D
- 8b. Sample answer:
Summer vacation is approaching, and I am on cloud nine.
9. C
- 10a. A, B, C
- 10b. Sample answer:
The long-haired girl seemed friendly, so we asked her for directions.
- 11a. $5mn - 3m^2n - 3mn^2$
- 11b. $-10x - y - 4z$
- 11c. $12a^2 - ab - 6b^2$
- 12a. $c = 2$ and $c = 4$
- 12b. $w = -3$ and $w = -1$
- 12c. $v = 1$ and $v = 3$



- 14a. Red
- 14b. Blue
- 14c. 4
- 15a. Parallel: 3
Perpendicular: $-\frac{1}{3}$
- 15b. Parallel: $-\frac{1}{2}$
Perpendicular: 2
- 16a. $y = -3x + 13$
- 16b. $y = 6x - 16$
- 16c. $y = -2x - 7$
- 17a. (9, -1)
- 17b. (5, 6)
- 17c. (-5, -1)
- 18a. Knoxville
- 18b. 1.1
- 18c. 25%
- 19a. $f(x) = 0.7(0.97)^x$
- 19b. $f(x) = 12.75(1.06)^x$
- 20a. Distance: 4.5 units
Midpoint: (1, 7)
- 20b. Distance: 12.8 units
Midpoint: (3, 2)