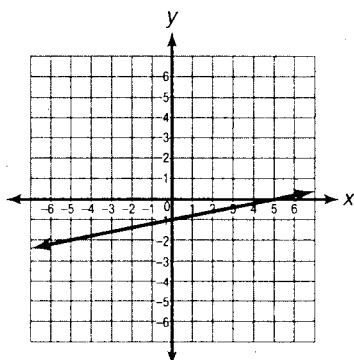


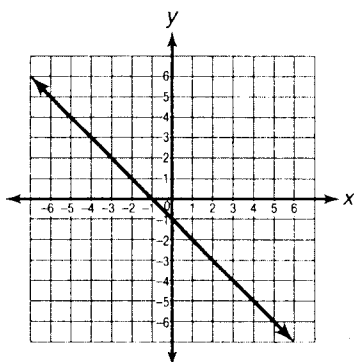
CHAPTER 3 REVIEW

1. Which graph does **not** represent a function?

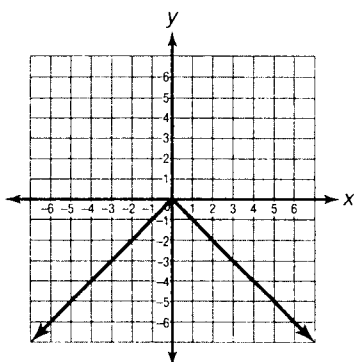
A.



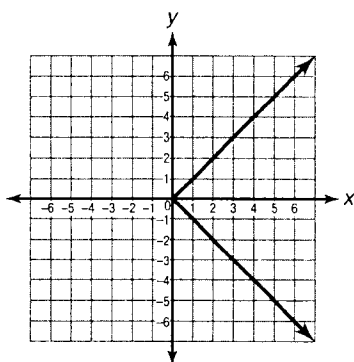
B.



C.



D.



2. Which equation represents a linear function?

A. $y = x^2 - 2$

B. $y = \frac{3}{x} + 4$

C. $2x = 6y + 8$

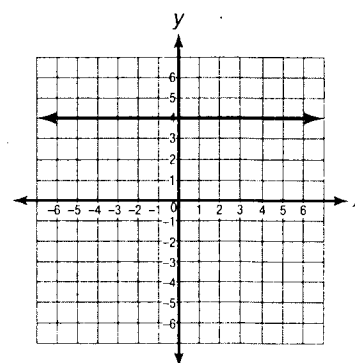
D. $y - 4 = 2x + y$

3. Which of the following relations shows the linear function with the **greatest** slope?

A.

x	3	3	3	3
y	0	5	10	15

B.



C.

x	-3	0	3	6
y	0	6	12	18

D. $y = 3x - 4$

Use the information below for questions 4 and 5.

Del and Rita leave their homes at the same time and bike at a constant speed to their school. The information for their bike rides is given below. In this situation, x represents the time since leaving home, in minutes, and y represents the remaining distance to the school, in miles.

Del's Function

x	0	7.5
y	1.5	0

Rita's Function

$$y = -0.15x + 1.35$$

4. Which equation models Del's function?

- A. $y = -0.2x + 1.5$
- B. $y = 1.5x - 0.2$
- C. $y = -0.2x + 6.5$
- D. $y = 1.5x - 6.25$

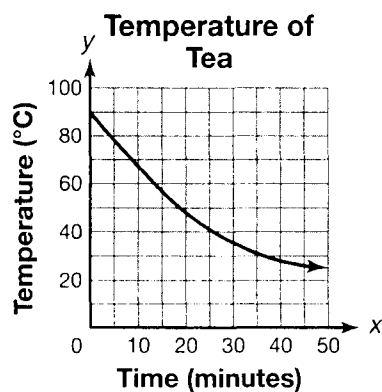
5. Which statement is true?

- A. Del lives closer to the school, but Rita gets there first.
- B. Del lives closer to the school, and she gets there first.
- C. Rita lives closer to the school, but Del gets there first.
- D. Rita lives closer to the school, and she gets there first.

6. Which situation can be modeled by an equation in the form $y = mx + b$?

- A. The total cost in dollars, y , of buying shirts from an online store depends on the number of shirts ordered, x , plus \$5 for shipping any amount.
- B. The time, y , it takes a runner to travel 5 miles depends on the speed of the runner, x .
- C. The area, y , of a circular coaster depends on the radius, x , of the plate.
- D. The number of bacteria, y , in a dish doubles every hour, x .

7. Jeremy makes a mug of hot tea. The graph below shows how the temperature of the tea in the mug changes over time.



Which correctly describes the function shown by the graph?

- A. It is linear and it decreases at a constant rate.
- B. It is nonlinear and it decreases, but not at a constant rate.
- C. It is linear and has a combination of increasing and decreasing sections.
- D. It is nonlinear and has a combination of increasing and decreasing sections.

Use the information and table below for questions 8–11.

A trampoline park sells tickets good for one hour and limits the number of people who can enter each hour. The table shows the relationship between x , the time since the park opened, in hours, and y , the total number of people who have entered that day.

Time (hours), x	2	4	6	8
Total Number of People, y	130	260	390	520

8. Which **best** explains why the relationship between time and the total number of people can be represented by a linear function?
- A. The relationship is linear because the x -values change by a constant rate of 2.
 - B. The relationship is linear because the y -values change by a constant rate of 130.
 - C. The relationship is linear because the ratios of the change in y -values to the change in x -values are equal.
 - D. The relationship is linear because the function is increasing over time.
9. Which equation models the relationship between x and y ?
- A. $y = 65x$
 - B. $y = 130x$
 - C. $y = 65x + 130$
 - D. $y = 130x + 65$
10. Which statement accurately describes the function?
- A. When the trampoline park opened, no visitors had entered the park.
 - B. When the trampoline park opened, 65 visitors had already entered the park.
 - C. When the trampoline park opened, 130 visitors had already entered the park.
 - D. Each hour, twice as many visitors were allowed in as had been admitted during the previous hour.
11. According to the model, what would be the total number of visitors to the park 11 hours after it opened?
- A. 670
 - B. 715
 - C. 1,235
 - D. 1,430

12. Which **best** describes the relationship between the input, x , and the output, y , shown in the table below?

x	0	2	4	6
y	-1	-1	-1	-1

- A. The relationship is a function because each input has exactly one output.
- B. The relationship is not a function because each input has the same output.
- C. The relationship is a function because each output has exactly one input.
- D. The relationship is not a function because the graph of this relation is a horizontal line.
13. Lucy needs \$80 to buy a new scooter. She collects \$35 per week selling bracelets but spends \$12 each week on jewelry-making supplies. She saves the remaining amount in her bank account. Which function can be used to determine y , the amount of money, in dollars, that Lucy still needs to earn to afford the new scooter?
- A. $y = 23 + 80x$
- B. $y = 80 + 23x$
- C. $y = 23 - 80x$
- D. $y = 80 - 23x$

Use the information below for questions 14–16.

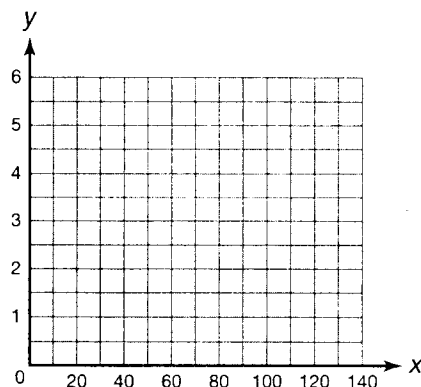
The total charge in dollars, y , of going roller skating includes a \$10 entrance fee plus \$3.50 for each hour of skate rental, x .

14. What is the equation for the function that models this situation?
- A. $y = x + 13.50$
- B. $y = 3.50 + 10x$
- C. $y = 3.50x + 10$
- D. $y = 13.50x + 1$
15. Which statement about the function is true?
- A. The initial value is \$6.50.
- B. The initial value is \$3.50.
- C. The rate of change is \$10.00.
- D. The rate of change is \$3.50.
16. How much would it cost to go to the roller rink and rent skates for 3 hours?
- A. \$20.50
- B. \$21.50
- C. \$33.50
- D. \$40.50

17. Diego is going to the park. He spends 30 minutes walking 1.5 miles from his home to the park. When he arrives at the park, he starts to run, traveling 2.5 miles in 20 minutes. He takes a water break on a bench for 20 minutes. Then he starts heading toward home and walks 3 miles in 40 minutes. He stops for 10 minutes at the corner store to buy a snack before walking for 20 more minutes to reach his home.

A. Consider the function that represents Diego's park trip, where x is the time, in minutes, and y is Diego's distance from his home, in miles. Is the function linear or nonlinear? Explain.

B. Draw the graph of the function that represents Diego's park trip. Be sure to label the graph and each axis.



17. Continued. Please refer to the previous page for task explanation.

C. Describe where the graph is increasing, decreasing, and constant. Use specific values in your description.

D. What was the rate of change when Diego ran in the park? How does it compare to the rate of change when Diego walked to the park? Explain how you know.