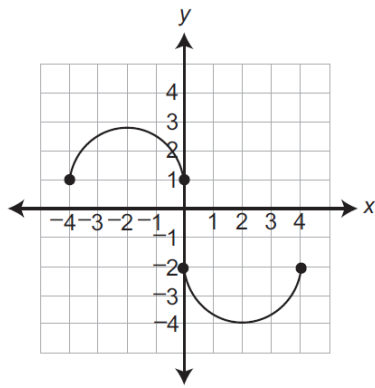
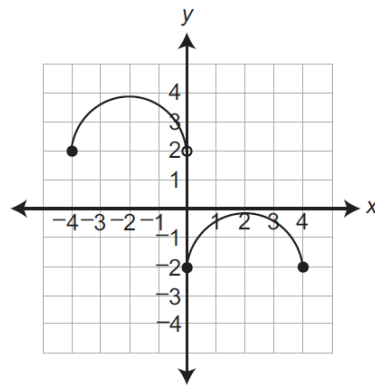


1. Which graph shows y as a function of x ?

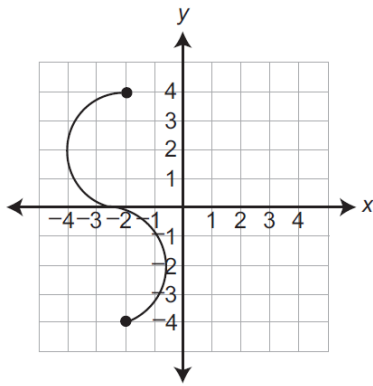
A.



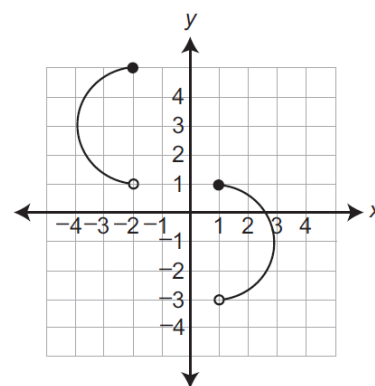
B.



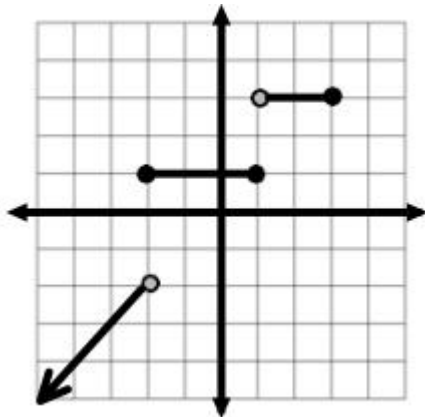
C.



D.



2. The graph of a function is shown below.



Which value is **not** in the range of the function?

- A. -4
 - B. -2
 - C. 1
 - D. 3
3. A pizza restaurant charges for pizza and adds a delivery fee. The cost (c), in dollars, to have any number of pizzas (p) delivered to a home is described by the function $c = 10p + 4$. Which statement is true?

- A. The cost of 4 pizzas is \$10.
- B. The cost of 3 pizzas is \$24
- C. Each pizza costs \$10 and the delivery fee is \$4.
- D. Each pizza costs \$4 and the delivery fee is \$10.

4. The table below shows values of y as a function of x .

| x | Y |
|-----|-----|
| 2 | 7 |
| 6 | 13 |
| 14 | 25 |
| 26 | 43 |
| 34 | 55 |

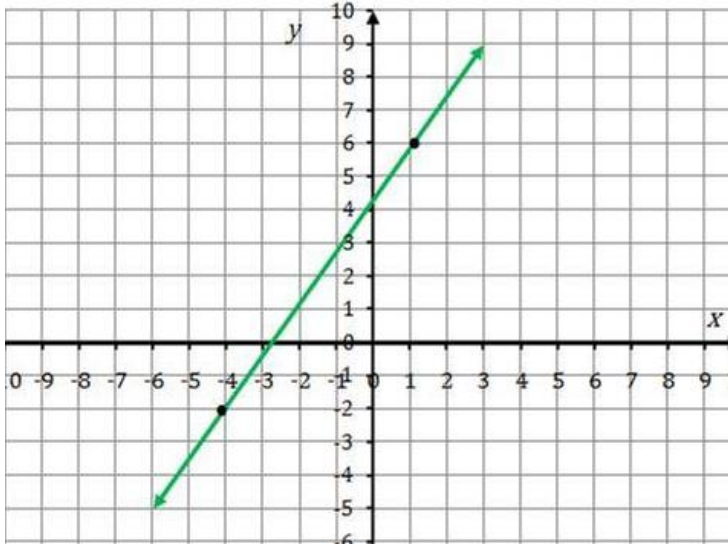
Which linear equation best describes the relationship between x and y ?

- A. $y = 3x + 1$
 - B. $y = 4.5x + 3.5$
 - C. $y = 1.5x + 4$
 - D. $y = 3.5x$
5. Jeff's restaurant sells hamburgers. The amount charged for a hamburger (h) is based on the cost for a plain hamburger plus an additional charge for each topping (t) as shown in the equation below.

$$h = 0.75t + 6$$

What does the number 6 represent in the equation?

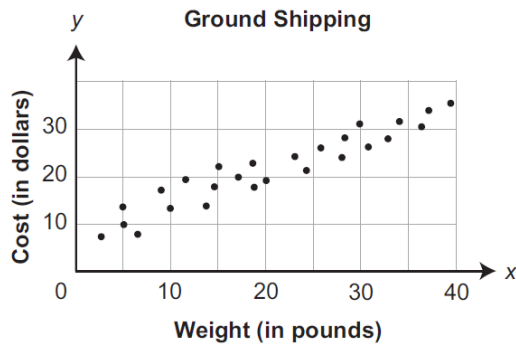
- A. The number of toppings
 - B. The cost of a plain hamburger
 - C. The additional cost for each topping
 - D. The cost of a hamburger with 1 topping
6. A graph of a linear equation is shown below.



Which equation describes the graph?

- A. $y = 0.625x + 5$
- B. $y = -1.6x + 4.4$
- C. $y = 1.6x + 4.4$
- D. $y = 0.625x + 4.4$

7. The scatter plot below shows the cost (y) of ground shipping packages from Brodheadsville, PA, to Minneapolis, MN, based on the package weight (x).



Which equation **best** describes the line of best fit?

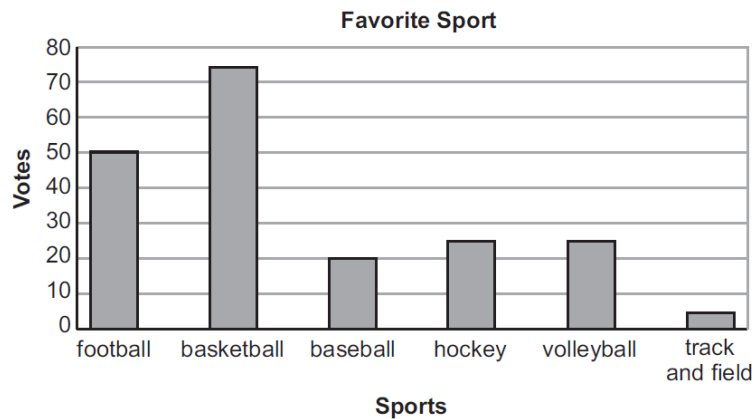
- A. $y = 0.37x + 10.11$
- B. $y = 0.37x + 1.57$
- C. $y = 0.68x + 6.61$
- D. $y = 0.68x + 2.32$

8. The daily high temperatures in degrees Fahrenheit in Allentown, PA, for a period of 10 days are shown below.

76 80 89 96 98 100 98 91 89 82

Which statement correctly describes the data?

- A. The median value is 89.
 - B. The interquartile range is 34.
 - C. The lower quartile value is 66.
 - D. The upper quartile value is 94.
9. Vy asked 200 students to select their favorite sport and then recorded the results in the bar graph below.



Vy will ask another 160 students to select their favorite sport. Based on the information in the bar graph, how many more students of the next 160 asked will select football rather than track and field as their favorite sport?

- A. 20
 - B. 26
 - C. 36
 - D. 40
10. A number cube with sides labeled 1 through 6 is rolled two times, and the sum of the numbers that end face up is calculated. What is the probability that the sum of the numbers is 6?

- A. $\frac{1}{18}$
- B. $\frac{1}{12}$
- C. $\frac{5}{36}$
- D. $\frac{1}{6}$

Algebra 1 Keystone Open-ended questions

1. Hector's family is on a car trip.

When they are 94 miles from home, Hector begins recording their distance driven (d), in miles, after h hours in the table below.

| Distance by Hour | |
|--------------------------|------------------------------|
| Time in hours (h) | Distance in Miles (d) |
| 0 | 94 |
| 1 | 162 |
| 2 | 230 |
| 3 | 298 |

The pattern continues.

- A. Write an equation to find the distance driven (d), in miles, after a given number of hours (h).

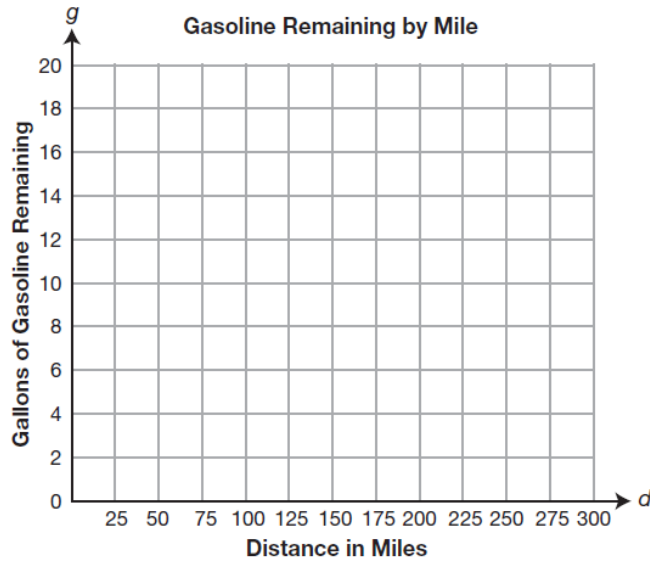
- B. Hector also kept track of the remaining gasoline. The equation shown below can be used to find the gallons of gasoline remaining (g) after distance driven (d), in miles.

$$g = 18 - \frac{1}{20}d$$

Use the equation to find the missing values for gallons of gasoline remaining.

| Gasoline Remaining by Mile | |
|---------------------------------|---|
| Distance in Miles (d) | Gallons of Gasoline Remaining (g) |
| 100 | |
| 200 | |
| 300 | |

- C. Draw the graph of the line formed by the points in the table from Part B.



- D. Explain why the slope of the line drawn in part C must be negative.

2. The weight, in pounds, of each wrestler on the high school wrestling team at the beginning of the season is listed below.

188 152 122 160 216 140

- A. What is the median weight of the wrestlers?

- B. What is the mean weight of the wrestlers?

- C. Two more wrestlers join the team during the season. The addition of these wrestlers has no effect on the mean weight of the wrestlers, but the median weight of the wrestlers increases 3 pounds. Determine the weights of the two new wrestlers.