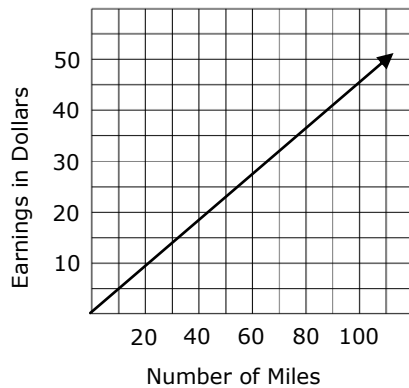
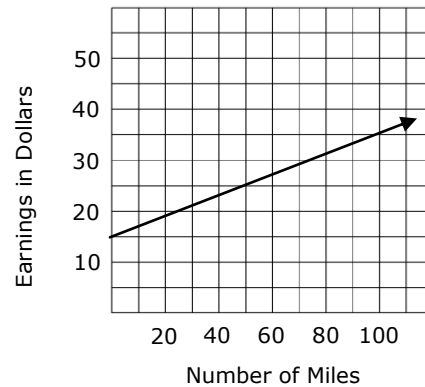
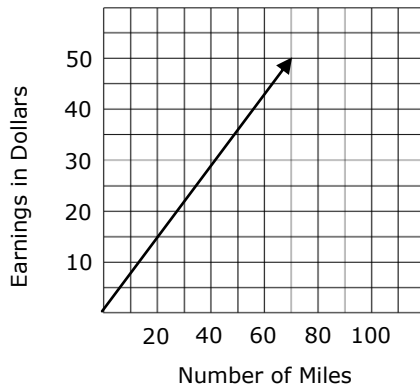
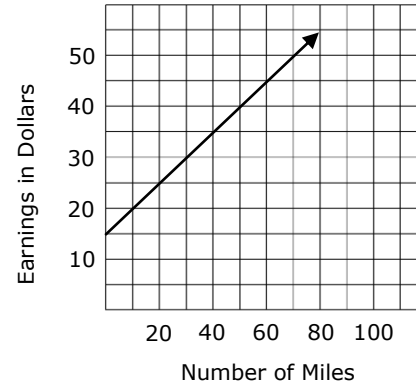


1. A plumber charges \$35 to make a house call, plus \$25 an hour for labor. This equation, $c = 25h + 35$, represents c , the total cost of a visit for h hours. What is the independent variable?
- A** Numbers of hours worked
- B** Amount of money paid
- C** Price of labor
- D** House call charge
2. Marcus delivers pizzas three nights a week. He receives \$15 per night, plus \$10 for every 20 miles he drives to make the deliveries. Which of the following graphs represents his earnings for one night?

A**C****B****D**

- 3** The children in the Grant family are paid an allowance, A , each week by their parents for some of the extra work they do around the house. Mr. and Mrs. Grant use this formula to determine the amount of allowance each child receives. The amount of money each child receives as an allowance is dependent on the age, Y , of the child in years.

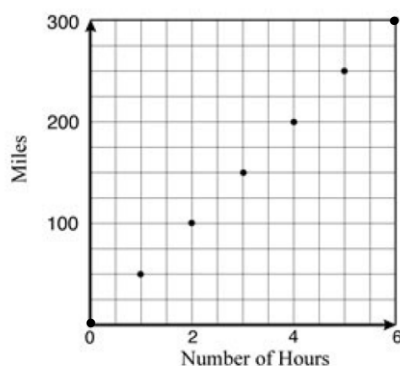
$$A = 4.00 + 0.50Y$$

Based on this equation, which of the following statements is most likely to be true?

- A** Each child's allowance goes up \$4.00 per year.
- B** A 14-year old child would get a weekly allowance that is \$4.00 more than a 10-year old child.
- C** The weekly allowance increases by 50 cents a year.
- D** The children receive \$4.50 for every year of their age.
- 4** Which equation represents the parent function for all linear functions?

- A** $y = x^2$
- B** $y = x$
- C** $y = -x$
- D** $y = -x^2$

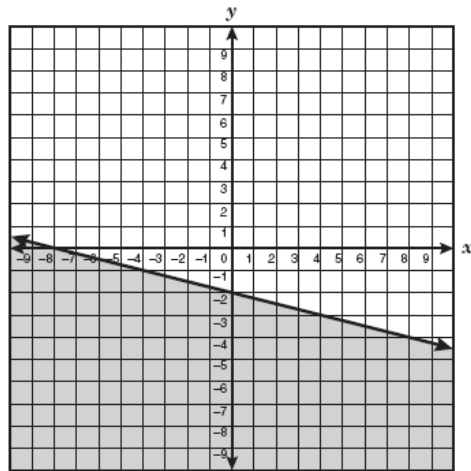
- 5** The distance a vehicle travels in six hours is shown in the graph below.



What is the domain and range of the function?

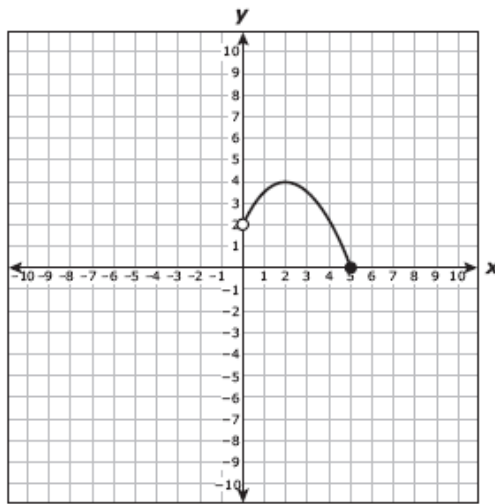
- A** Domain $\{1, 2, 3, 4\}$ Range $\{50, 100, 150, 200\}$
- B** Domain $\{0, 1, 2, 3, 4, 5, 6\}$ Range $\{0, 50, 100, 150, 200, 250, 300\}$
- C** Domain $\{0, 100, 200, 300\}$ Range $\{0, 2, 4, 6\}$
- D** Domain $\{100, 200, 300\}$ Range $\{2, 4, 6\}$

- 6 Which of the following inequalities best describes the graph shown below?



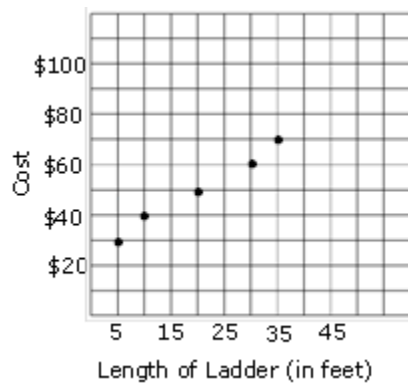
- A** $y \leq -\frac{1}{4}x - 8$
- B** $y \leq -\frac{1}{4}x - 2$
- C** $y \geq -\frac{1}{4}x - 8$
- D** $y \geq -\frac{1}{4}x - 2$

- 7 What is the domain of the function graphed below?



- A** $0 < x \leq 5$
- B** $2 < x \leq 5$
- C** $0 < x \leq 4$
- D** $0 < x < 2$

- 8** The scatterplot below shows the cost, in dollars, of five different ladders. Each ladder is a different length.



Mr. James is pricing ladders of different length. Based on the graph above, which of the following amounts would be a reasonable cost for a ladder with a length of 40 feet?

- A** \$102
- B** \$60
- C** \$80
- D** \$150

- 9** Jill has a \$30 gift certificate for a movie rental. Each time she rents a movie, \$6 is deducted from her gift certificate balance. If m represents the number of movies Jill rents, which of these expressions can be used to determine her gift certificate balance?
- A** $30m - 6$
- B** $30m + 6$
- C** $30 + 6m$
- D** $30 - 6m$

- 10** In the quadratic equation $x^2 - 3x + c = 0$, c represents an unknown constant. If $x = 1$, what is the value of c ?

Record your answer and fill in the bubbles on your answer document.

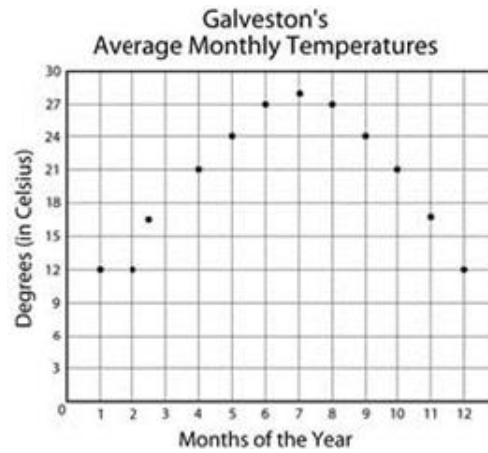
- 11** Given that y is a function of x and $y = 2x + 3$, express this using function notation.

- A** $f(x) = \frac{x-3}{2}$
- B** $f(x) = 2x + 3$
- C** $f(y) = 2x + 3$
- D** $f(y) = 2y + 3$

- 12** Let $f(x) = x$, where x is the number of people seated on a bus that has a maximum seating capacity of 50. What are the reasonable values for the domain of $f(x)$?

- A** All real numbers
- B** $0 \leq x \leq 50$
- C** $x \leq 50$
- D** $0 \leq x \leq 50$, x is a whole number

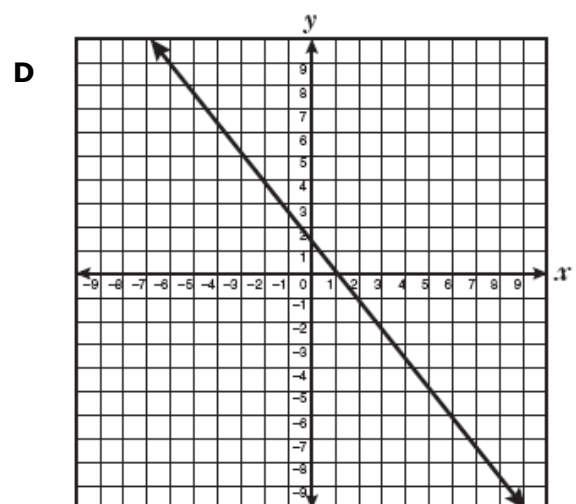
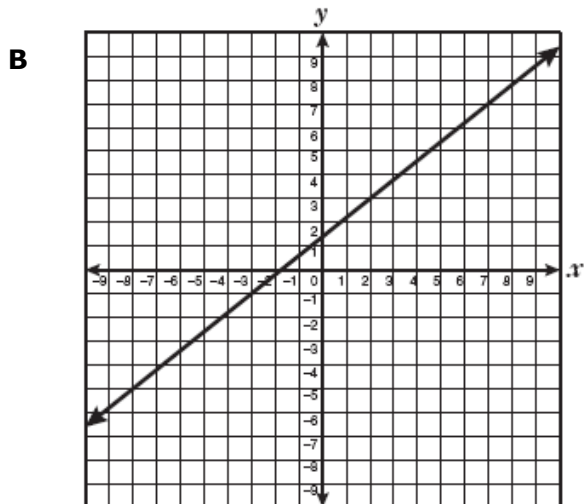
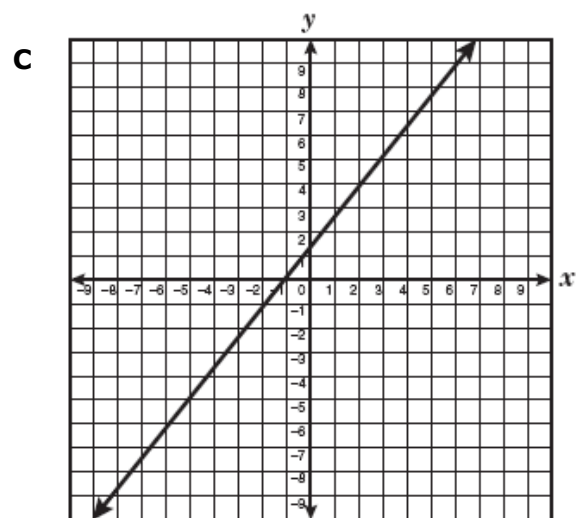
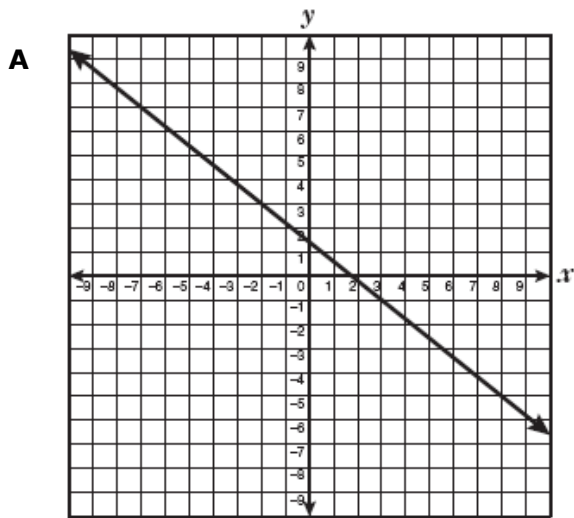
- 13** This scatterplot represents the average monthly temperatures, in degrees Celsius, for Galveston, Texas. Months of the year are represented as: 1 = January, 2 = February, 3 = March, etc.



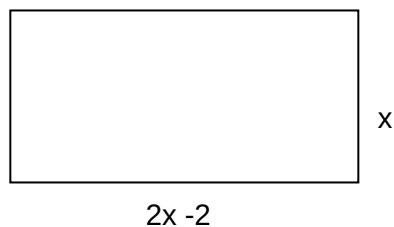
If the temperatures for next year are assumed to follow the same patterns, according to this graph, what would be the best prediction for the temperature in May of the next year?

- A** 5° Celsius
- B** 12° Celsius
- C** 25° Celsius
- D** 28° Celsius

- 14 Which graph best represents the function $y = \frac{4}{5}x + 1.4$?



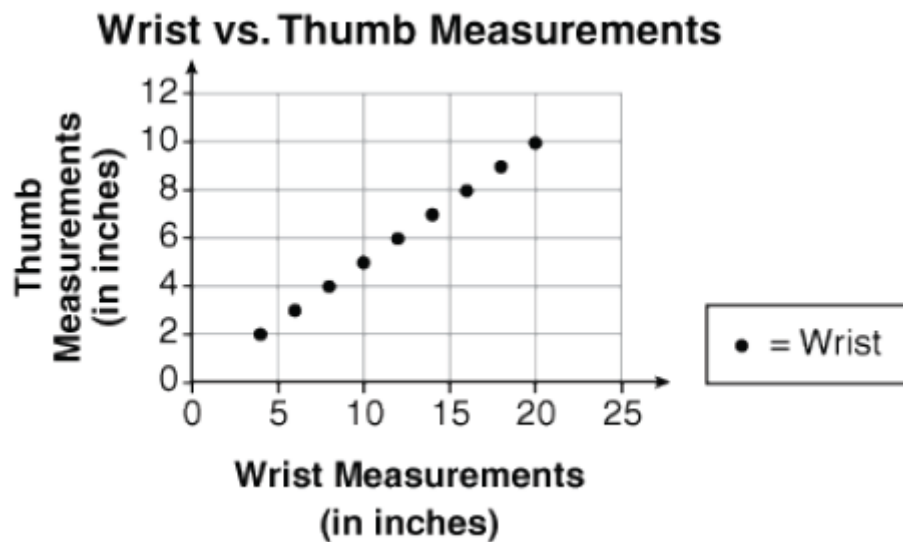
- 15 The rectangle below has a perimeter of 50 units.



What is the length, in units, of the shorter side?

Record your answer and fill in the bubbles on your answer document.

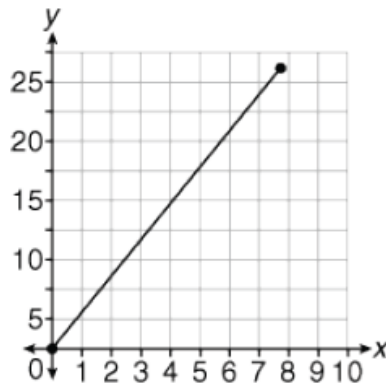
- 16** Alyssa's carpet cleaning service charges an initial fee of \$45, plus \$5 for every 100 square feet of carpet cleaned. Alyssa graphed y , the amount that her cleaning service charges, as a function of x , the number of square feet of carpet cleaned. What does the y -intercept of Alyssa's graph represent?
- A** The charge per square foot of carpet cleaned
- B** The number of square feet of carpet cleaned
- C** The total amount owed
- D** The initial fee
- 17** The measurements of the circumference of the thumbs and wrists of several different people are shown in the graph below.



What is the relationship between the thumb circumference, t , and the wrist circumference, w ?

- A** $t = \frac{1}{4}w$
- B** $t = \frac{1}{2}w$
- C** $t = 2w$
- D** $t = 4w$

- 18** Troy graphed the line of the equation $y = 5x + 2$, and Sarah graphed the line of the equation $y = 5x - 2$ on the same coordinate plane. Which of the following statements best describes the line that Sarah graphed?
- A** It intersects Troy's line at the point $(2, -2)$.
 - B** It is parallel to and 4 units above Troy's line.
 - C** It is parallel to and 4 units below Troy's line.
 - D** It is exactly the same line as Troy's line.
- 19** The amount an appliance repairman charges for each job is represented by the function $t = 50h + 35$, where h represents the number of hours he spent on the job and t represents the total amount he charges in dollars for the job. The repairman plans to change the amount he charges for each job. The amount he plans to charge is represented by the function $t = 50h + 45$. What will be the effect of this change on the amount he charges for each job?
- A** The total amount he charges for each job will increase by \$10.
 - B** The total amount he charges for each job will decrease by \$10.
 - C** The amount he charges per hour will increase by \$10.
 - D** The amount he charges per hour will decrease by \$10.
- 20** The following graph represents the relationship between the number of days (x-axis) and the number of hours spent studying (y-axis) for the college students who were randomly chosen for Luke's survey.



What does the slope of this graph represent?

- A** the total hours spent studying
- B** the number of days spent studying
- C** the number of hours spent studying per day
- D** the number of days spent studying per hour

- 21** The equation $y = -\frac{1}{4}x + 5$ is graphed on a coordinate grid. If the slope remains the same and the y -intercept is changed to -3 , and the new line is graphed on the same axes, which statement accurately describes the graph of the new line?
- A** The new line would be perpendicular to the original line.
- B** The new line would fall from left to right and would be steeper than the original line.
- C** The new line would be parallel to the original line.
- D** The new line will intersect the y -axis 3 units lower than the original line.
- 22** If a line passes through the points $(1, 2)$ and $(5, 3)$ the equation of the line is...
- A** $y = -\frac{1}{4}x + \frac{11}{8}$
- B** $y = 4x + 3$
- C** $y = \frac{1}{4}x + \frac{7}{4}$
- D** $y = 4x + 1$
- 23** What is the x -coordinate of the x -intercept of the function $\frac{2}{3}y = -6x + 12$?
- A** 12
- B** 18
- C** -9
- D** 2
- 24** A start-up business begins with a base of 2,000 customers. The number of customers over a period of time, t , is modeled by $y = 50t + 2,000$. If the rate of growth of the number of customers doubles, what is the new slope of the model?
- A** 25
- B** 4,000
- C** 50
- D** 100

- 25** Jerome solved the equation below using the steps shown.

Step 1: $3x + 6 = 18$

Step 2: $3x = 12$

Step 3: $x = 4$

What operation did he perform to get from Step 2 to Step 3?

- A** Added 6 to both sides of the equation
- B** Divided both sides of the equation by 3
- C** Multiplied both sides of the equation by 3
- D** Subtracted 6 from both sides of the equation
- 26** Bill bought a TV for \$1300. If he puts \$500 down and pays \$50 per month, he can calculate the number of months he will be paying for the TV using the equation $1300 = 50x + 500$, where x is the number of monthly payments. How will the number of monthly payments change if Bill makes a \$750 down payment and pays \$55 per month?
- A** Bill will still make the same number of monthly payments.
- B** Bill will make 6 fewer payments.
- C** Bill will make 8 fewer payments.
- D** Bill will make 9 fewer payments.
- 27** Helen went on a helicopter ride above the city. The table shows the total cost of the number of times around the city, including the pickup fee.

Times around the city, t	1	2	3	4
Cost in dollars, c	25	30	35	40

Which function describes the cost for t number of times around the city?

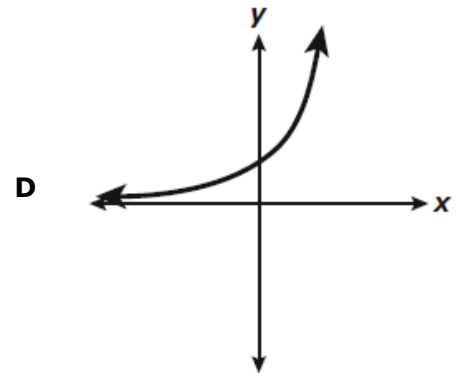
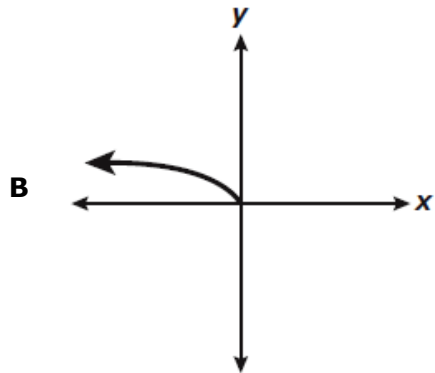
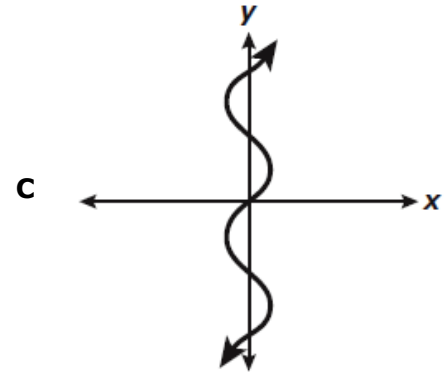
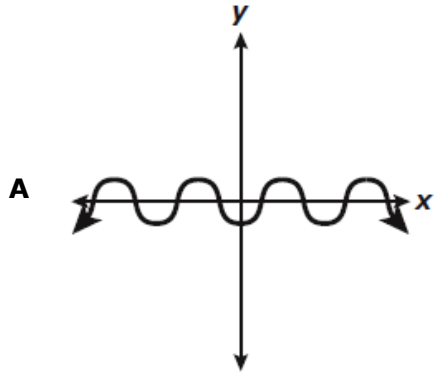
- A** $c = 4t + 21$
- B** $c = 5t + 20$
- C** $c = 4t + 12$
- D** $c = 12t + 4$

28 Which expression is equivalent to $3(x - 4) - 5(x - 2) + 3(x - 3)$?

- A $-6x - 3$
- B $-4x + 15$
- C $-6x + 5$
- D $x - 11$

29

Which graph does not represent y as a function of x ?



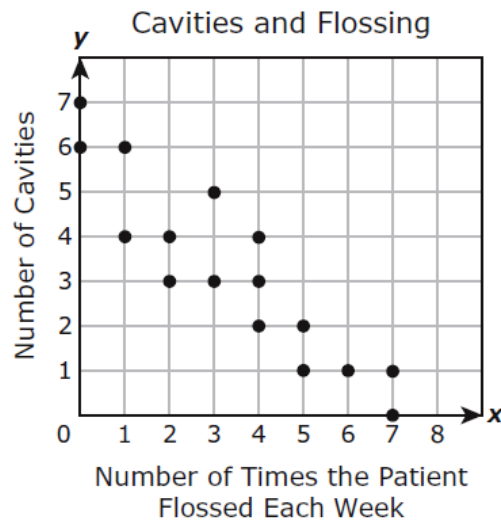
- 30** The table shows the independent and dependent quantities in a functional relationship.

Independent Quantity	Dependent Quantity
0	-1
1	3
2	7
3	11
4	15

What function best represents this relationship?

- A** $f(x) = 1 - 4x$
- B** $f(x) = 4x - 1$
- C** $f(x) = 4x - 2$
- D** $f(x) = 2 - 4x$

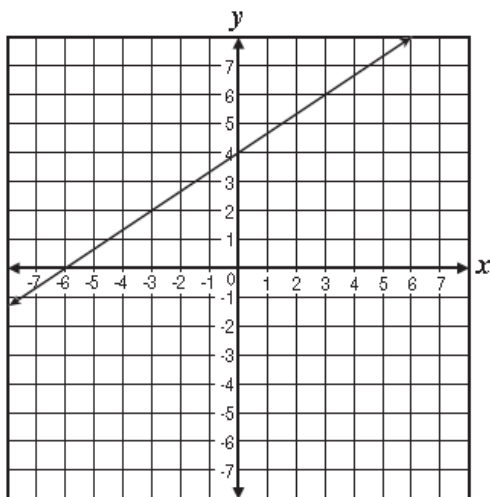
- 31** A dentist made the scatterplot below to show the number of cavities her patients had as it relates to the number of times they flossed their teeth each week.



Which of the following best describes the correlation for the data?

- A** Positive correlation
- B** Nonlinear correlation
- C** Negative correlation
- D** No correlation

- 32** Which equation represents the line shown in the graph below?



- A** $y = \frac{2}{3}x + 4$
- B** $y = \frac{2}{3}x - 6$
- C** $y = \frac{3}{2}x + 4$
- D** $y = \frac{3}{2}x - 6$
- 33** A 120-foot long rope is cut into 3 pieces. The first piece rope, f , is twice as long as the second piece of rope. The third piece of rope is three times as long as the second piece of rope. What is the length of the longest piece of rope?
- A** 20 ft.
- B** 60 ft.
- C** 72 ft.
- D** 48 ft.

- 34** The lengths of the sides of a triangle are y , $y + 1$, and 7 centimeters. If the perimeter is 56 centimeters, what is the value of y ?

Record your answer and fill in the bubbles on your answer document.

- 35** The cost of a charm bracelet is \$12 without the charms. There is an additional cost of \$6 for each charm that you put on the bracelet. How many charms, c , are on a bracelet that costs \$96.

Record your answer and fill in the bubbles on your answer document.