**Course 1 Benchmark Test – End of Year**

**1.** Which rule best describes the relationship shown in the function table below?

|  |  |
| --- | --- |
| **Input** | **Output** |
| 1 | 3 |
| 2 | 6 |
| 3 | 9 |
| 4 | 12 |
| **5** | 15 |

**A.** subtract 2

**B.** add 2

**C.** divide by 3

**D.** multiply by 3

**2.** Marcus needs to earn a grade *higher than* 88 on his final quiz in order to have an A average. Which inequality best represents this situation?

**F.** *g* ≥ 88

**G.** *g* > 88

**H.** *g* < 88

**I.** *g* ≤ 88

**3. SHORT ANSWER** Define a variable and write an expression to represent the following phrase.

*a number increased by 5*

**4.** What is the least common multiple of 8 and 14?

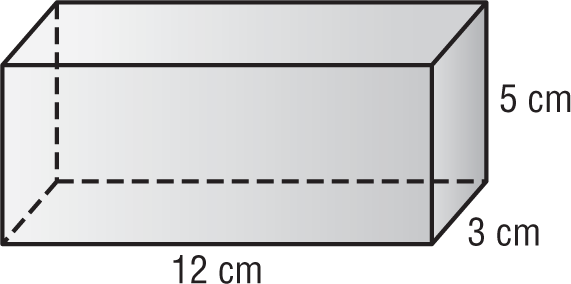
**A.** 56

**B.** 28

**C.** 4

**D.** 2

**5.** What is the volume of the rectangular prism shown below?



**F.** 20

**G.** 75

**H.** 180

**I.** 222

**6.** The list below shows the number of books read by students in Abram**’**s class over the summer. What is the mode of the data?

3, 6, 12, 4, 3, 5, 4, 8, 4, 10, 4, 8, 7, 5, 7

**A.** 4 books

**B.** 5 books

**C.** 7 books

**D.** 9 books

**Course 1 Benchmark Test – End of Year** *(continued)*

**7.** Which type of data display would be best for showing how data change over time?

**F.** box plot

**G.** histogram

**H.** line graph

**I.** line plot

**8.** There are 65 people watching a movie at a theater. If 40% of the customers purchased refreshments for the movie, how many customers purchased refreshments?

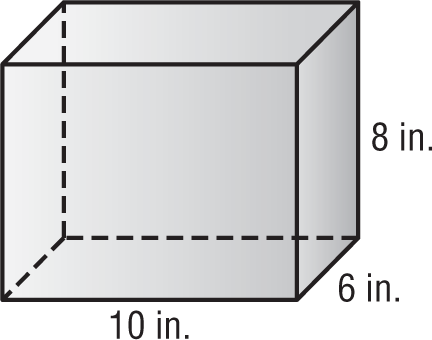
**A.** 26 customers

**B.** 34 customers

**C.** 39 customers

**D.** 163 customers

**9.** Adeline is wrapping a gift for her mother in a box with the dimensions shown.



What is the minimum amount of wrapping paper Adeline will need to completely cover the gift box?

**F.** 188 square inches

**G.** 376 square inches

**H.** 424 square inches

**I.** 488 square inches

**10.** The ratio table shows the number of miles Karen can drive for 1, 2, 3, and 4 gallons of gasoline. Based on the table, how far would she be able to drive on 8 gallons of gasoline?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Gallons** | 1 | 2 | 3 | 4 |
| **Distance (mi)** | 30 | 60 | 90 | 120 |

**A.** 30 mi

**B.** 150 mi

**C.** 210 mi

**D.** 240 mi

**11. SHORT ANSWER** Emily made 14 out of 19 shots during basketball practice. About what percent of her shots did she make? Explain your reasoning.

**12.** A muffin recipe calls for a ratio of 5 cups of flour to 2 cups of sugar. For each cup of sugar that is used, how many cups of flour are needed?

**F.**  cups of flour

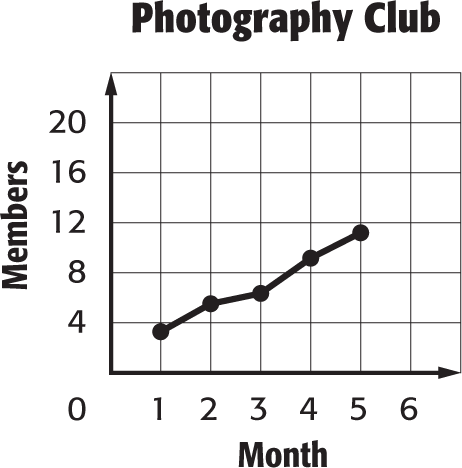
**G.**  cups of flour

**H.**  cup of flour

**I.**  cup of flour

**Course 1 Benchmark Test – End of Year** *(continued)*

**13. SHORT ANSWER** The line graph shows the number of members during the first few months   
of a photography club. Describe the data. Then predict the number of members for the sixth month.



**14.** The table shows the number of points Anna scored this season. Find the mean number of points Anna scored.

|  |  |  |  |
| --- | --- | --- | --- |
| **Points Scored** | | | |
| 12 | 7 | 9 | 10 |
| 16 | 6 | 8 | 15 |
| 12 | 11 | 12 | 14 |

**A.** 9 points

**B.** 10 points

**C.** 11 points

**D.** 12 points

**15.** Which of the following integers has the least absolute value?

**F.** –3

**G.** 4

**H.** 8

**I.** –12

**16.** Albert purchased 2.4 pounds of mixed nuts for $4.79 per pound. How much did he spend in all,  
to the nearest cent?

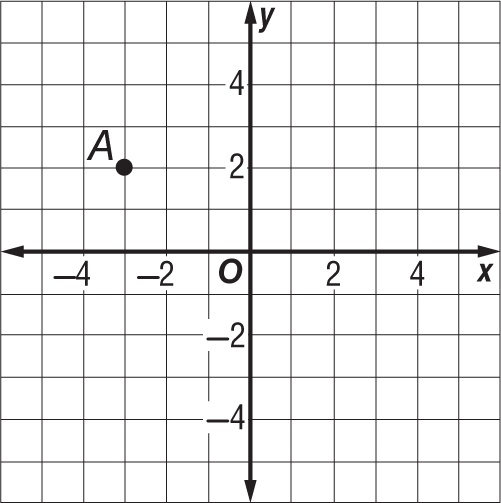
**A.** $12.43

**B.** $11.50

**C.** $6.71

**D.** $1.99

**17.** Which of the following coordinate pairs corresponds to point *A*?



**F.** (2, –3)

**G.** (3, –2)

**H.** (–2, 3)

**I.** (–3, 2)

**18.** Which of the following symbols, when placed in the blank, makes the number sentence true?

\_\_\_\_\_0.

**A.** +

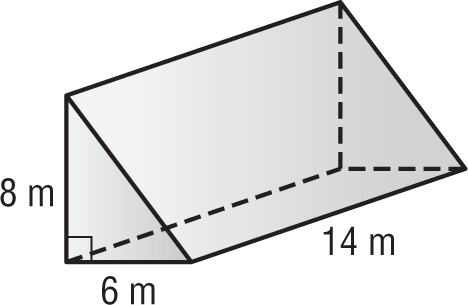
**B.** =

**C.** <

**D.** >

**Course 1 Benchmark Test – End of Year** *(continued)*

**19.** What is the volume of the triangular prism?



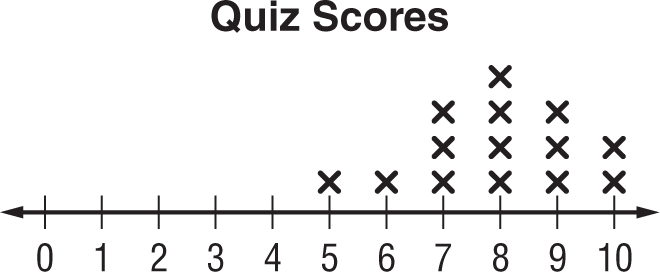
**F.** 336 cubic meters

**G.** 384 cubic meters

**H.** 672 cubic meters

**I.** 724 cubic meters

**20.** The line plot shows the quiz scores of several students.



What is the range of the quiz scores?

**A.** 4 points

**B.** 5 points

**C.** 7 points

**D.** 8 points

**21.** Julio is evaluating the expression below.

6 + 2(9 – 4) – 3 × 5

Which operation should be performed first according to the order of operations?

**F.** Add 6 and 2.

**G.** Multiply 2 by 9.

**H.** Subtract 4 from 9.

**I.** Multiply 3 by 5.

**22.** Which property is represented by the equation shown below?

6 × 3 = 3 × 6

**A.** Multiplicative Inverse Property

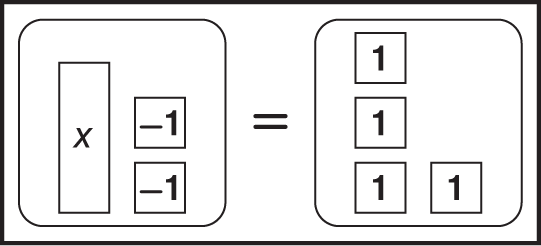
**B.** Multiplicative Identity Property

**C.** Associative Property of Multiplication

**D.** Commutative Property of Multiplication

**23.** The algebra mat below models the equation

*x* – 2 = 4.



What is the solution to the equation?

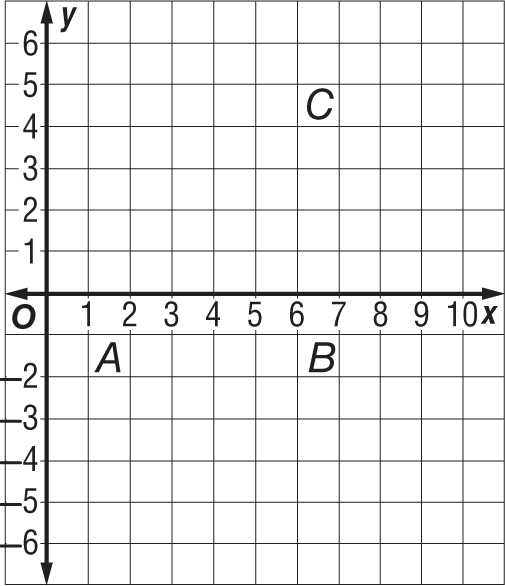
**F.** 6

**G.** 2

**H.** –2

**I.** –8

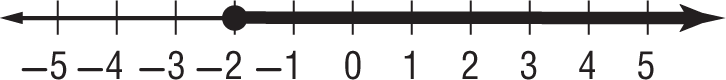
**24. SHORT ANSWER** Graph the figure with the vertices *A*(2, –1), *B*(6, –1), and *C*(6, 4). Then classify the figure.

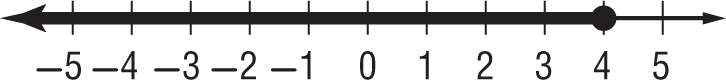


**Course 1 Benchmark Test – End of Year** *(continued)*

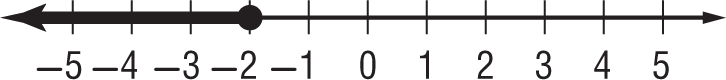
**25.** Which number line shows the solution to the inequality *x* − 3 ≤ 1?

**A.**

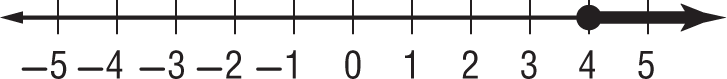




**B.**



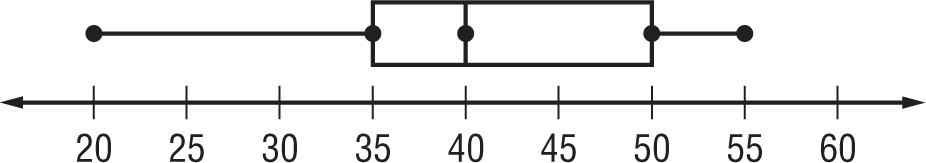
**C.**



**D.**

**26.** The box plot shows the daily attendance at a fitness class.

**Fitness Class Attendance**



What is the median of the data?

**F.** 55

**G.** 40

**H.** 35

**I.** 20

**27.** What value of *x* results in a true number sentence in the equation shown?

2*x* = 16

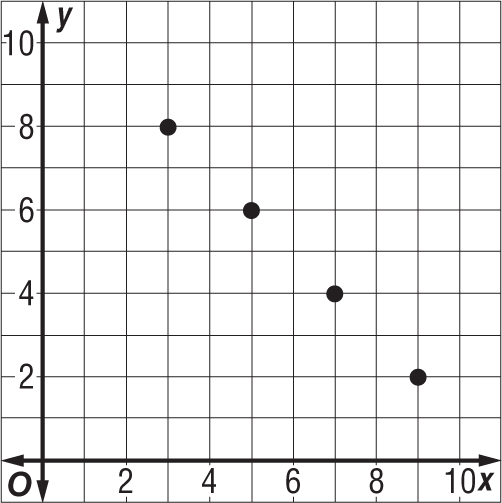
**A.** 32

**B.** 14

**C.** 8

**D.** 4

**28.** Which of the following equations represents the function graphed on the coordinate plane?



**F.** *y* = *x* + 5

**G.** *y* = *x* + 1

**H.** *y* = 11 + *x*

**I.** *y* = 11 – *x*

**29. SHORT ANSWER** The table below shows computer prices at an electronics store.

|  |  |  |  |
| --- | --- | --- | --- |
| **Computer Prices ($)** | | | |
| 950 | 620 | 545 | 810 |
| 775 | 1,120 | 905 | 775 |

Find the mean absolute deviation to the nearest cent. Explain what this value represents.

**Course 1 Benchmark Test – End of Year** *(continued)*

**30.** The table below shows the type and number of vehicles in a parking lot

.

|  |  |
| --- | --- |
| **Types of Cars** | |
| Minivans | 12 |
| Sedan | 28 |
| SUV | 9 |
| Trucks | 5 |

What is the ratio of sedans to minivans in simplest form?

**A.** 7 to 3

**B.** 3 to 7

**C.** 7 to 10

**D.** 10 to 3

**31.** The expression *rt* can be used to find the distance traveled by an object that has an average speed of *r* over time *t*. How many miles will a hot air balloon travel in 2.2 hours if it travels at an average speed of 12.5 miles per hour?

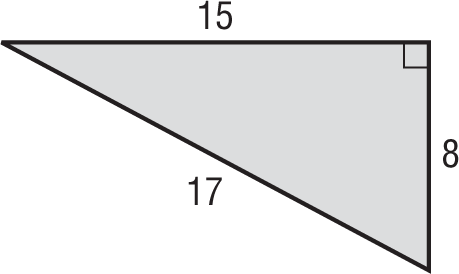
**F.** 30.1 miles

**G.** 27.5 miles

**H.** 14.7 miles

**I.** 5.7 miles

**32.** What is the area of the triangle?



**A.** 120 square units

**B.** 75 square units

**C.** 60 square units

**D.** 40 square units

**33. SHORT ANSWER** The table below shows the number of canoes rented from Outdoor Adventures over the past four weekends

.

|  |  |  |  |
| --- | --- | --- | --- |
| **Canoe Rentals** | | | |
| 21 | 32 | 17 | 24 |
| 15 | 30 | 28 | 26 |

Find the range, median, first quartile, third quartile, and interquartile range of the data.

**34.** A carpenter makes 4 table legs for each table that he builds. Which equation represents the relationship between the number of tables built *t* and the number of legs made *l*?

**F.** *l* = 4*t*

**G.** *t* = 4*l*

**H.** *l* = *t* + 4

**I.** *t* = *l* + 4

**35.** Which of the following ratios is equivalent to ?

**A.** 16 : 10

**B.** 5 to 13

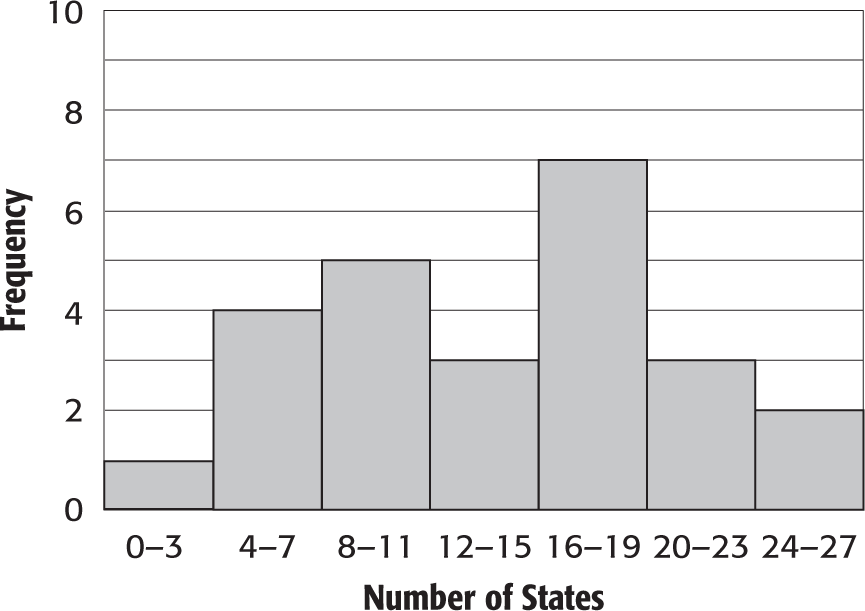
**C.**

**D.** 15 out of 24

**Course 1 Benchmark Test – End of Year** *(continued)*

**36.** Kylie surveyed several classmates about the number of states they have visited. The results are shown in the histogram.

**How Many States Have You Visited?**



How many of Kylie’s classmates have visited more than 15 states?

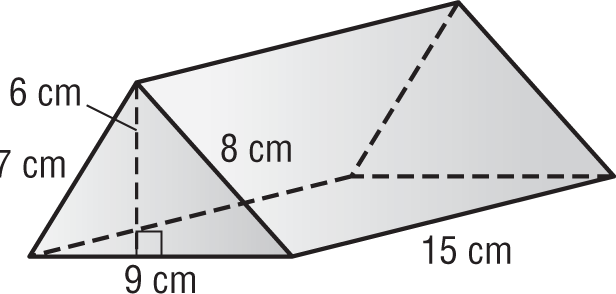
**F.** 3 students

**G.** 8 students

**H.** 12 students

**I.** 15 students

**37.** What is the surface area of the triangular prism?



**A.** 468 square centimeters

**B.** 414 square centimeters

**C.** 405 square centimeters

**D.** 378 square centimeters

**38.** Which of the following represents the decimal 0.32 written as a fraction in simplest form?

**F.**

**G.**

**H.**

**I.**

**39. SHORT ANSWER** Jeremy can purchase a   
1.2-pound package of ground beef for $4.55   
or a 1.6-pound package for $6.30. Which is   
the better buy? Explain your reasoning.

**40.** Pamela is the leading server on her volleyball team. On average, she serves an ace 44% of the time. If she attempts 25 serves in her next game, how many aces would you expect her to have?

**A.** 57 aces

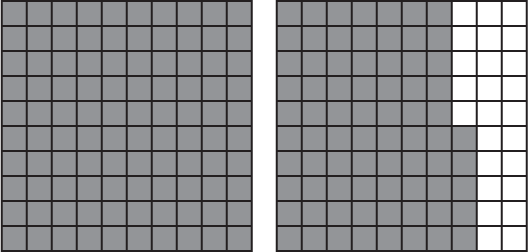
**B.** 19 aces

**C.** 11 aces

**D.** 8 aces

**Course 1 Benchmark Test – End of Year** *(continued)*

**41.** What percent is represented by the model?



**F.** 175%

**G.** 125%

**H.** 75%

**I.** 25%

**42.** Which of the following best describes the center of a data set if there are outliers in the data but no big gaps in the middle of the data?

**A.** mean

**B.** median

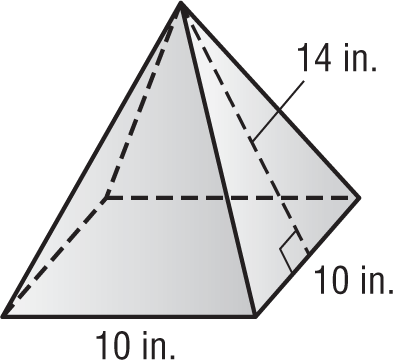
**C.** mode

**D.** range

**43. SHORT ANSWER** Complete the function table.

|  |  |
| --- | --- |
| **Input (*x*)** | **Output (3*x−* 1)** |
| 1 |  |
| 2 |  |
| 3 |  |
| 4 |  |
| 5 |  |

**44.** What is the surface area of a square pyramid with base side lengths of 10 inches and a slant height of 14 inches?



**F.** 220

**G.** 280

**H.** 380

**I.** 660

**45.** Which of the following properties would you use to solve the equation?

*r* + 4 = 11

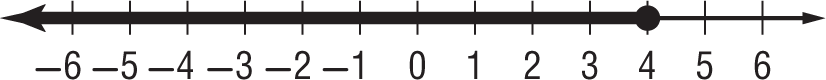
**A.** Addition Property of Equality

**B.** Division Property of Equality

**C.** Multiplication Property of Equality

**D.** Subtraction Property of Equality

**46.** Which of the following inequalities is graphed on the number line?



**F.** *x* > 4

**G.** *x* ≥ 4

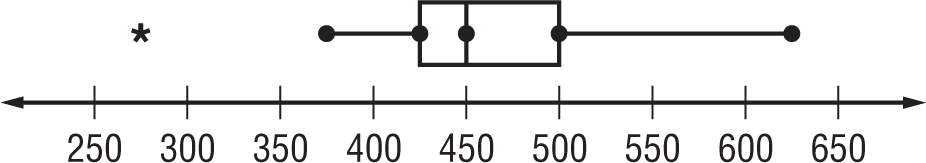
**H.** *x* ≤ 4

**I.** *x* < 4

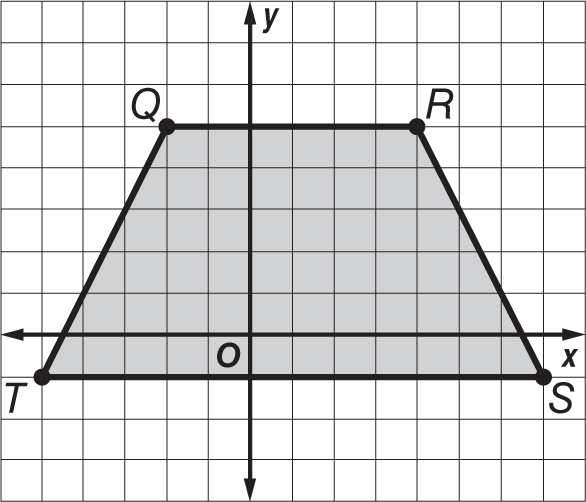
**Course 1 Benchmark Test – End of Year** *(continued)*

**47. SHORT ANSWER** The box plot below shows the number of Calories in different lunches at a restaurant. Describe the shape of the distribution using symmetry and outliers.

**Number of Calories**



**48.** What is the area of trapezoid *QRST*?



**A.** 54 square units

**B.** 68 square units

**C.** 76 square units

**D.** 108 square units

**49.** Mr. Addison is building a sandbox shaped like a rectangular prism. The sandbox is 8 feet long, 6 feet wide, and 1.5 feet deep. How many cubic feet of sand will the sandbox hold?

**F.** 15.5 cubic feet

**G.** 72 cubic feet

**H.** 105 cubic feet

**I.** 138 cubic feet

**50.** The Pirates football team has played 75% of its games so far this season. If the team has played 9 games, how many games are there in the season?

**A.** 7 games

**B.** 11 games

**C.** 12 games

**D.** 15 games

**51.** Which of the following expressions is equivalent to 3(4*x* + 1)?

**F.** 7*x* + 4

**G.** *x* + 4

**H.** 12*x* + 1

**I.** 12*x* + 3

**52.** What is the missing rule in the function table?

|  |  |
| --- | --- |
| ***x*** | **?** |
| 2 | 7 |
| 3 | 8 |
| 6 | 11 |
| 9 | 14 |
| 12 | 17 |

**A.**

**B.** *x* + 5

**C.** –4*x*

**D.** *x* – 3

**Course 1 Benchmark Test – End of Year** *(continued)*

**53.** Which of the following expressions correctly uses exponents to show the prime factorization of 168?

**F.**  × 3 × 7

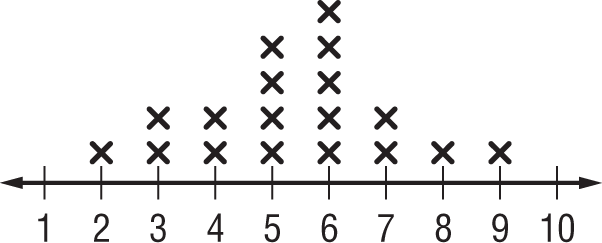
**G.**  × × 7

**H.**  × × 7

**I.**  × 3 × 7

**54. SHORT ANSWER** Which measure of center would you use to describe the center of the data shown on the line plot? Explain your reasoning.

**Number of Pets**



**55.** A pancake recipe calls for cup of mix for 4 pancakes. If Beth needs to make 60 pancakes,   
how many cups of pancake mix will she need?

**A.** 5 cups

**B.**  cups

**C.**  cups

**D.**  cup