NAME _____ DATE _____ PERIOD _____

Course 1 Benchmark Test – First Quarter

1. The table below shows the number of pennies, nickels, dimes, and quarters that Heather has in her purse. What is the ratio of dimes to nickels expressed as a fraction in simplest form?

Heather's Coins	
Dimes	9
Nickels	6
Pennies	8
Quarters	4

A. $\frac{3}{2}$

B. $\frac{2}{3}$

C. $\frac{3}{5}$

D. $\frac{2}{5}$

2. A cookie recipe calls for a ratio of 4 cups of flour to 3 cups of sugar. For each cup of flour that is used, how many cups of sugar are needed?

F. $\frac{4}{3}$ cups of sugar

G. $\frac{3}{4}$ cups of sugar

H. $\frac{2}{3}$ cup of sugar

I. $\frac{3}{7}$ cup of sugar

3. Which ratio is *not* equivalent to 5 : 8?

A. 10 out of 18

B. 15 to 24

C. $\frac{20}{32}$

D. 10 : 16

4. **SHORT ANSWER** Mrs. Wilkinson can buy a 20-ounce box of cereal for \$3.60 or a 28-ounce box of cereal for \$4.20. Which is the better buy? Explain your reasoning.

5. The ratio table shows how much Raymond's brother earns for working different numbers of hours. How many hours would he need to work in order to earn \$176?

Hours	5	8	15	
Earnings	\$40	\$64	\$120	\$176

F. 18 hours

G. 20 hours

H. 22 hours

I. 24 hours

6. There are 30 students in Mr. Holland's music class. If 30% of the students play in the school band, how many students in the class play in the school band?

A. 9 students

B. 12 students

C. 15 students

D. 100 students

NAME _____ DATE _____ PERIOD _____

Course 1 Benchmark Test – First Quarter *(continued)*

7. SHORT ANSWER Jasmine answered 19 out of 25 questions correctly on a quiz. About what percent of her answers were correct? Explain.

8. Which of the following shows the rational numbers in order from least to greatest?

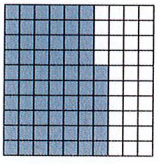
F. 25%, 0.22, $\frac{1}{5}$

G. $\frac{1}{5}$, 0.22, 25%

H. 0.22, $\frac{1}{5}$, 25%

I. 0.22, 25%, $\frac{1}{5}$

9. The model below represents 66%. What decimal is equivalent to this percent?



A. 0.066

B. 0.66

C. 6.6

D. 66

10. How is the decimal 0.55 written as a fraction in simplest form?

F. $\frac{55}{100}$

G. $\frac{11}{20}$

H. $\frac{11}{50}$

I. $\frac{11}{55}$

11. Caleb's receipt for lunch is shown below. If Caleb pays with a $10 bill, how much change will he receive?

Donna's Deli	
Chicken Sandwich	$3.79
Soup	$1.45
Drink	$1.29
Tax	$0.39

A. $6.92

B. $5.74

C. $3.18

D. $3.08

12. Colleen rode her bicycle 9.5 miles in 0.8 hour. What was her average speed in miles per hour?

F. 11.875 miles per hour

G. 10.3 miles per hour

H. 8.7 miles per hour

I. 7.6 miles per hour

NAME _____ DATE _____ PERIOD _____

Course 1 Benchmark Test – First Quarter *(continued)*

13. There are 25 servings in a 30.2-ounce jar of peanut butter. How many ounces of peanut butter are there in 1 serving?

A. 1.208 ounces

B. 1.15 ounces

C. 0.828 ounce

D. 0.64 ounce

14. **SHORT ANSWER** Angela earns $6.25 per hour babysitting. Estimate how much she will earn if she babysits for 9 hours this weekend. Explain.

15. Which of the following is *not* a factor of 84?

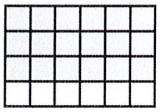
F. 2

G. 3

H. 7

I. 8

16. Which of the following does *not* represent the shaded portion of the figure below?



A. 25%

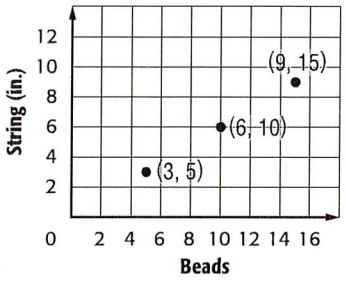
B. $\frac{3}{4}$

C. 75%

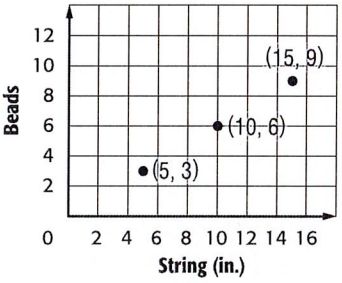
D. 0.75

17. Roberta uses 5 beads for every 3 inches of string while making necklaces. Which graph best represents the ratio of necklace string to beads used?

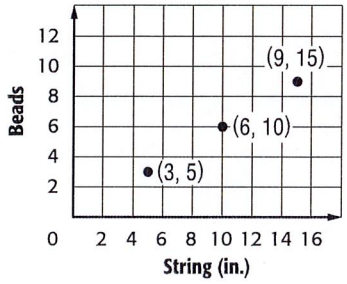
F.



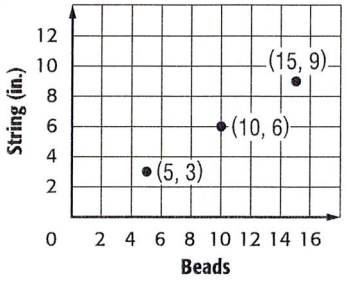
G.



H.



I.



NAME _____ DATE _____ PERIOD _____

Course 1 Benchmark Test – First Quarter *(continued)*

18. Regina purchased 1.75 pounds of turkey breast from her local deli for $5.99 per pound. To the nearest cent, how much did she spend in all?

A. $3.42

B. $7.74

C. $10.48

D. $11.98

19. SHORT ANSWER Katrina uses 4.125 yards of fabric for each curtain panel she makes. How many yards will she need if she makes 14 panels?

20. The table below shows the results of a survey on students' favorite school lunches. What fraction of the students surveyed said that grilled cheese is their favorite school lunch?

What Is Your Favorite School Lunch?	
Lunch	**Percent**
Pizza	35%
Grilled Cheese	30%
Spaghetti	20%
Chicken	10%
Soup	5%

F. $\frac{3}{100}$

G. $\frac{1}{5}$

H. $\frac{1}{4}$

I. $\frac{3}{10}$

21. Tommy's batting average this season is 0.275. This means that he had a hit in 27.5% of his at-bats. If Tommy had 11 hits so far this season, how many at-bats has he had?

A. 40 at-bats

B. 35 at-bats

C. 26 at-bats

D. 3 at-bats

22. In a machine, a large gear completes a revolution every minute while a small gear completes a revolution every 24 seconds. If the gears are currently aligned, how much time will pass before they are aligned again?

F. 12 seconds

G. 24 seconds

H. 1 minute

I. 2 minutes

23. Which of the following is the best estimate for the problem shown below?

$$151 \div 29$$

A. about 4

B. about 5

C. about 6

D. about 7

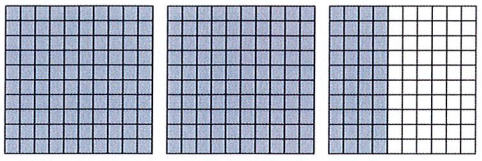
NAME _____ DATE _____ PERIOD _____

Course 1 Benchmark Test – First Quarter *(continued)*

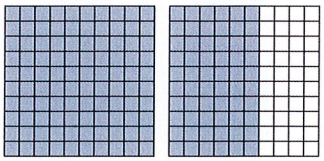
24. SHORT ANSWER One acre is equivalent to 43,560 square feet. If an acre is also equivalent to 4,840 square yards, how many square feet are equal to one square yard?

25. Which model represents 140%?

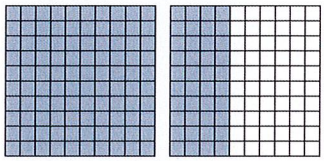
F.



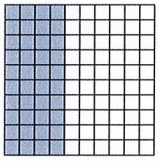
G.



H.



I.



NAME _____ DATE _____ PERIOD _____

Course 1 Benchmark Test – Second Quarter

1. Raul is making a scale model of an airplane that has a wingspan of 44 feet. If Raul's scale model is $\frac{1}{16}$ the size of the actual airplane, what is the wingspan of his model?

A. 704 ft

B. 60 ft

C. $2\frac{3}{4}$ ft

D. $1\frac{2}{3}$ ft

2. Two-thirds of the students in Hannah's homeroom plan to do some volunteering this summer. Of these students, $\frac{3}{5}$ plan to volunteer at the community center. What fraction of the students in Hannah's homeroom plan to volunteer at the community center this summer?

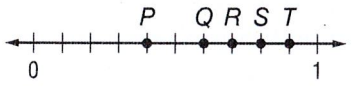
F. $\frac{2}{3}$

G. $\frac{3}{5}$

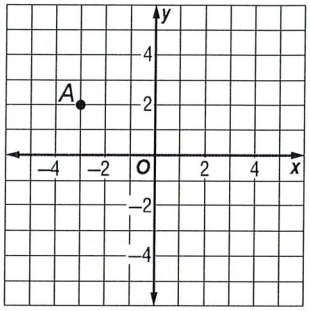
H. $\frac{2}{5}$

I. $\frac{1}{15}$

3. SHORT ANSWER Which point on the number line is closest to the product of the numbers graphed at points R and T? Explain your answer.



4. In which quadrant does point A lie on the coordinate plane?



A. I

B. II

C. III

D. IV

5. Which of the following integers has the greatest absolute value?

F. 0

G. 7

H. −10

I. 1

6. The Panthers football team lost 4 yards on each of their first two plays of the game. Which of the following integers represents the progress of the team after the first two plays?

A. −8

B. −4

C. 4

D. 8

NAME _____ DATE _____ PERIOD _____

Course 1 Benchmark Test – Second Quarter *(continued)*

7. The table shows the record low temperatures of four different towns. Which of the following shows the record temperatures ordered from least to greatest?

Record Low Temperatures	
Town	**Temperature (°F)**
Oakmont	−7
Cherry Grove	3
Anderson Hills	11
Glentown	−2

F. 11, 3, −2, −7

G. −2, 3, −7, 11

H. −2, −7, 3, 11

I. −7, −2, 3, 11

8. Which of the following expressions correctly uses exponents to show the prime factorization of 360?

A. $2^4 \times 3^2 \times 5$

B. $2^3 \times 3^2 \times 5$

C. $2^4 \times 3 \times 5$

D. $2^3 \times 3 \times 5^2$

9. The expression $\frac{d}{t}$ can be used to find the average speed of an object that travels a distance d in time t. What is a car's average speed if it travels 145 miles in 2.5 hours?

F. 58 miles per hour

G. 62 miles per hour

H. 65 miles per hour

I. 362.5 miles per hour

10. Which of the following expressions is equivalent to $6(5 + 3x)$?

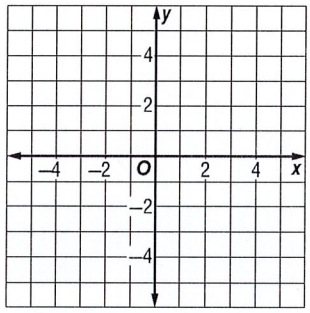
A $30 + 3x$

B $11 + 9x$

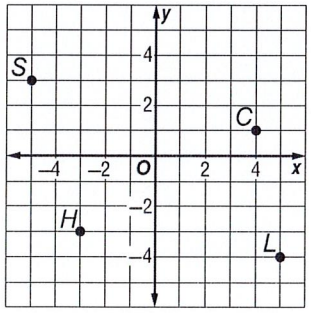
C $30 + 18x$

D $11 + 3x$

11. **SHORT ANSWER** Graph and label point W(4, −1) on the coordinate plane.



12. What are the coordinates of the point in Quadrant IV on the coordinate plane?



F. (4, 1)

G. (1, 4)

H. (−4, 5)

I. (5, −4)

NAME _____ DATE _____ PERIOD _____

Course 1 Benchmark Test – Second Quarter *(continued)*

13. Which of the following rational numbers represents a repeating decimal?

A. $\frac{25}{48}$

B. $\frac{11}{40}$

C. $\frac{7}{32}$

D. $\frac{3}{25}$

14. The top students in a distance throwing competition are shown in the table. How many yards did the winner of the competition throw the ball?

Distance Throwing Competition	
Student	**Distance (ft)**
Ashley	162
Craig	156
Fernando	175
Robert	166

F. 525 yards

G. 468 yards

H. $58\frac{1}{3}$ yards

I. 52 yards

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

seven years younger than Lisa

16. Mrs. Rome has $\frac{2}{3}$ of a pan of lasagna left after dinner. She wants to divide the leftover lasagna into 4 equal servings. What fraction of the original pan does each serving represent?

A. $\frac{1}{12}$

B. $\frac{1}{6}$

C. $\frac{1}{4}$

D. $\frac{3}{8}$

17. Jeff is making fruit punch for the school dance. He needs $3\frac{3}{4}$ cups of pineapple juice per batch. If Jeff wants to make $4\frac{1}{2}$ batches of punch, how many cups of pineapple juice will he need?

F. $8\frac{1}{4}$ cups

G. $12\frac{3}{8}$ cups

H. $15\frac{1}{2}$ cups

I. $16\frac{7}{8}$ cups

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

$$\frac{11}{12} \_\_\_\_ 0.916666...$$

A. +

B. =

C. <

D. >

NAME _____ DATE _____ PERIOD _____

Course 1 Benchmark Test – Second Quarter *(continued)*

19. SHORT ANSWER A kindergarten teacher has $22\frac{1}{2}$ cups of juice to be divided equally among her students. If each student is to receive $1\frac{1}{4}$ cups of juice, how many students are there?

20. A plumber has 28 feet of PVC pipe that he wants to cut into sections that are $2\frac{1}{3}$ feet long. How many sections of pipe will the plumber have in all?

F. $14\frac{1}{3}$ sections

G. $13\frac{1}{2}$ sections

H. 12 sections

I. 11 sections

21. Which property is represented by the equation below?

$$\frac{2}{3} \times \frac{3}{2} = 1$$

A. Multiplicative Inverse Property

B. Multiplicative Identity Property

C. Distributive Property

D. Commutative Property of Multiplication

22. Alexandria is evaluating the expression below.

$$3 \times 8 \div 2 + (4 - 1)^2$$

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

F. Multiply 3 and 8.

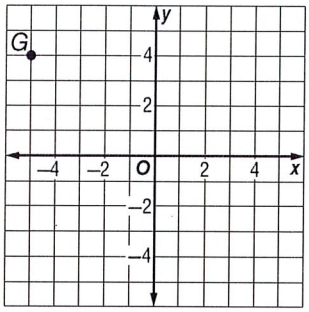
G. Divide 8 by 2.

H. Subtract 1 from 4.

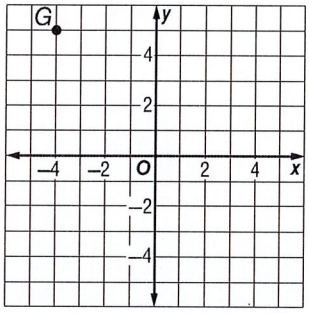
I. Evaluate the power.

23. Which of the following coordinate planes correctly shows point $G(4, -5)$ graphed?

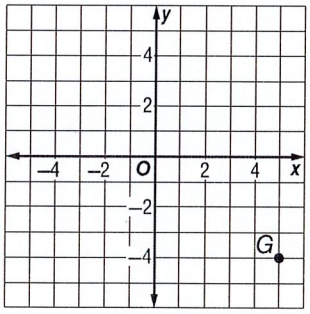
A.



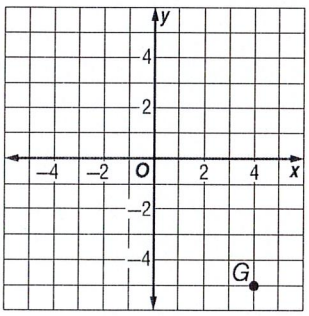
B.



C.



D.

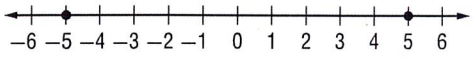


NAME _____ DATE _____ PERIOD _____

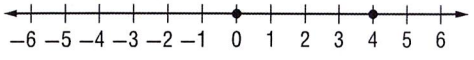
Course 1 Benchmark Test – Second Quarter *(continued)*

24. Which number line shows two different integers with the same absolute value?

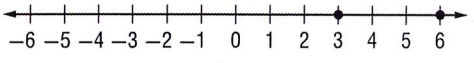
F.



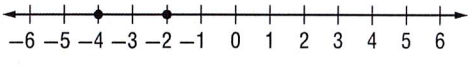
G.



H.



I.



25. SHORT ANSWER Use the Distributive Property to write a numerical expression that is equivalent to $25 + 10$.

NAME _____ DATE _____ PERIOD _____

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. $g \geq 88$

G. $g > 88$

H. $g < 88$

I. $g \leq 88$

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?

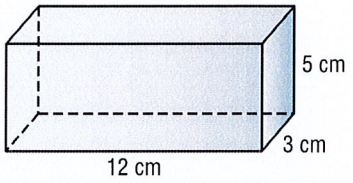
A. 56

B. 28

C. 4

D. 2

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



F. 20 cm^3

G. 75 cm^3

H. 180 cm^3

I. 222 cm^3

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

NAME _____ DATE _____ PERIOD _____

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?

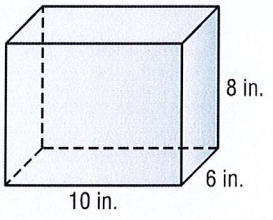
A. 26 customers

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. $\frac{5}{2}$ cups of flour

G. $\frac{5}{7}$ cups of flour

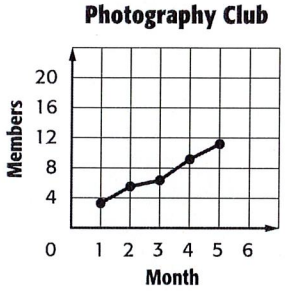
H. $\frac{2}{5}$ cup of flour

I. $\frac{2}{7}$ cup of flour

NAME _____ DATE _____ PERIOD _____

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?

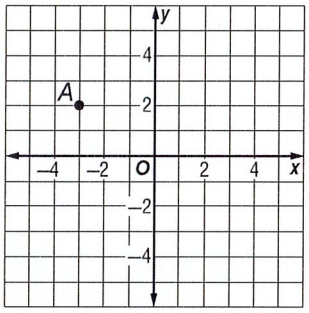
A. $12.43

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?

$$\frac{20}{75} \_\_\_\_ 0.\overline{26}$$

A. +

B. =

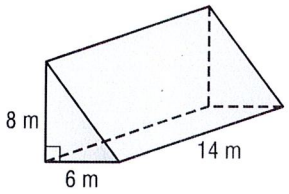
C. <

D. >

NAME _____ DATE _____ PERIOD _____

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

19. What is the volume of the triangular prism?



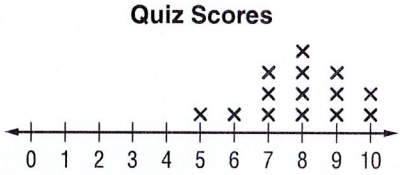
F. 336 cubic meters

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.

$$6 + 2(9 - 4) - 3 \times 5$$

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?

$$6 \times 3 = 3 \times 6$$

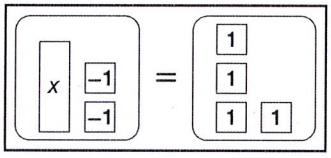
A. Multiplicative Inverse Property

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?

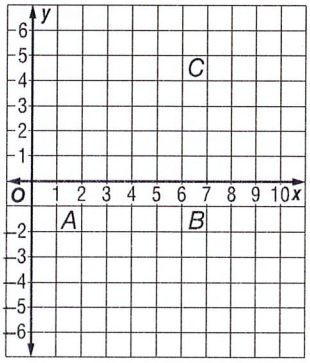
F. 6

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.



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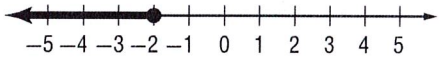
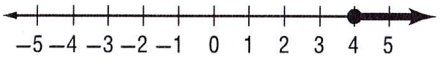
Course 1 Benchmark Test – End of Year *(continued)*

25. Which number line shows the solution to the inequality $x - 3 \leq 1$?

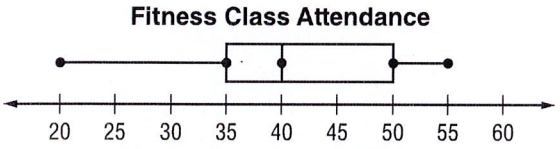
A.


B.


C.


D.


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



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?

$$2x = 16$$

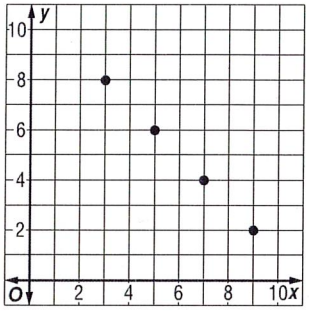
A. 32

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.

NAME _____ DATE _____ PERIOD _____

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?

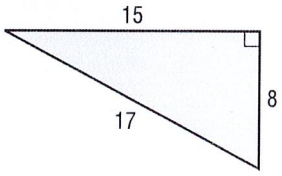
F. 30.1 miles

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. $l = 4t$

G. $t = 4l$

H. $l = t + 4$

I. $t = l + 4$

35. Which of the following ratios is equivalent to $\frac{5}{8}$?

A. 16 : 10

B. 5 to 13

C. $\frac{25}{44}$

D. 15 out of 24

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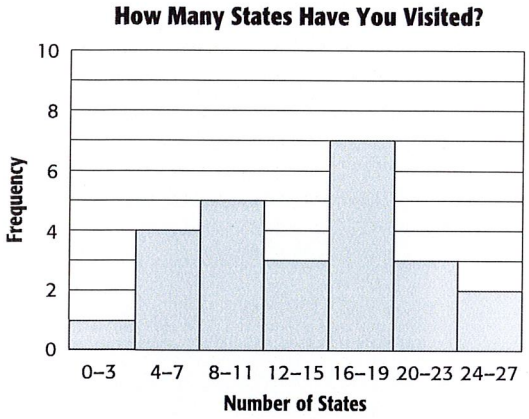
Course 1 Benchmark Test – End of Year *(continued)*

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



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

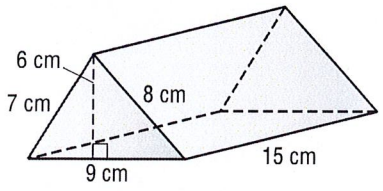
F. 3 students

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. $\frac{32}{100}$

G. $\frac{16}{50}$

H. $\frac{17}{50}$

I. $\frac{8}{25}$

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

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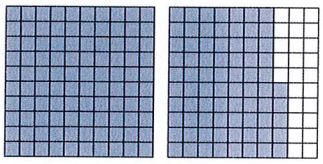
Course 1 Benchmark Test – End of Year *(continued)*

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

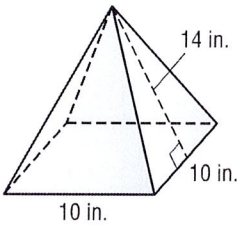
C. mode

D. range

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

Input (x)	Output ($3x - 1$)
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 in^2

G. 280 in^2

H. 380 in^2

I. 660 in^2

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

$$r + 4 = 11$$

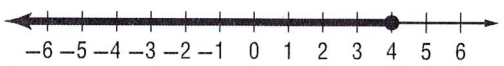
A. Addition Property of Equality

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. $x \geq 4$

H. $x \leq 4$

I. $x < 4$

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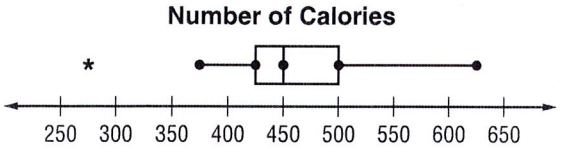
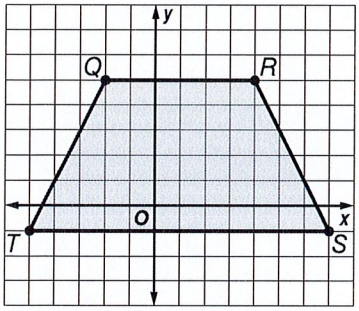
Course 1 Benchmark Test – End of Year *(continued)*

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.



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 $3(4x + 1)$?

F. $7x + 4$
G. $x + 4$
H. $12x + 1$
I. $12x + 3$

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

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

A. $\frac{x}{-4}$
B. $x + 5$
C. $-4x$
D. $x - 3$

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

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

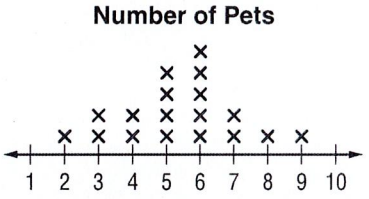
F. $2^4 \times 3 \times 7$

G. $2^3 \times 3^2 \times 7$

H. $2^4 \times 3^2 \times 7$

I. $2^3 \times 3 \times 7$

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.



55. A pancake recipe calls for $\frac{1}{3}$ 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. $4\frac{2}{3}$ cups

C. $3\frac{1}{3}$ cups

D. $\frac{1}{5}$ cup