

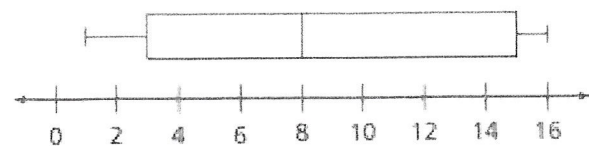
Name _____

1. Which list of numbers is ordered from greatest to least?

- (A) $-2\frac{1}{5}$, $|2\frac{1}{4}|$, 2.23, -2
 (B) $|2\frac{1}{4}|$, 2.23, -2 , $-2\frac{1}{5}$
 (C) -2 , $-2\frac{1}{5}$, $|2\frac{1}{4}|$, 2.23
 (D) $-2\frac{1}{5}$, -2 , 2.23, $|2\frac{1}{4}|$

2. Henry is buying orange juice to make punch for a party. He can buy the juice in 32-oz cartons for \$2.56 each or 48-oz cartons for \$3.36 each. Which is the better value? Explain.

3. Find the following measures of the data set shown in the box plot below.



minimum: _____

maximum: _____

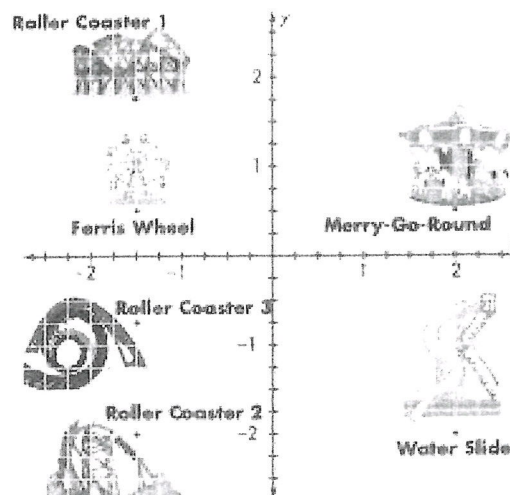
median: _____

first quartile: _____

third quartile: _____

interquartile range: _____

4. Use the map of the amusement park.



Part A

What are the coordinates of the ride located 1.25 units away from Roller Coaster 1, and 3.5 units away from the Merry-Go-Round?

Part B

What is located at $(-1.5, -2)$?

5. Select all the pairs of expressions that are equivalent.

- ☐ $14d + 21$ and $7(2d + 3)$
☐ $9(5r - 2)$ and $14r - 7$
☐ $8(6q - 9)$ and $48q - 72$
☐ $16 + 4w$ and $2(2w + 8)$
☐ $32t + 16$ and $16(2 - t)$

6. A gym charges membership dues of \$25 per month.

Part A

Complete the table to show how the total cost in dollars, C , and the number of months, m , of gym membership are related.

m	3	8	14
C			

Part B

Write an equation to represent the total cost based on the number of months of gym membership.

7. Which of the following is a statistical question?

- (A) How tall is Mr. Leung?
- (B) What are the ages of all your cousins?
- (C) What is the formula for the volume of a cube?
- (D) What is the school's address?

8. Kristy had a piece of fabric that she cut into 8 equal squares. Each square has area 0.625 ft^2 . What is the area of Kristy's original piece of fabric?

9. Rachel is making nachos for a party. The recipe calls for $\frac{2}{3}$ cup of cheese for each plate of nachos.

Part A

How many full plates of nachos can Rachel make with 5 cups of cheese? Explain.

Part B

How many more cups of cheese would Rachel need to make 9 plates of nachos? Explain.

10. Fill in the boxes to plot the five rational numbers below on the number line.

-0.5 , $\frac{3}{2}$, 0.75 , $-\frac{10}{5}$, -1.25



11. The boiling point of water is 212°F . In degrees Celsius, how much heat do I have to add to boil water that is already 185°F ? Use the formula $C = \frac{5}{9}(F - 32)$, where C represents the temperature in degrees Celsius and F represents the temperature in degrees Fahrenheit.

(A) 100°C
 (B) 15°C
 (C) 32°C
 (D) 185°C

12. A small theater sold 72 tickets for a play. The ratio of adult tickets to child tickets was 4:1. The ratio of adult tickets to senior tickets was 4:3.

Part A

Draw a diagram or make a table to represent the types of tickets sold.

Part B

How many of each type of ticket were sold?

13. Use the given set of coordinates to write the reflection across the x -axis of each point on the left.

$(7, -2)$ $(-3, 9)$ $(3, -9)$ $(-2, -7)$

$(-2, 7)$

$(3, 9)$

$(7, 2)$

$(-3, -9)$

14. The drama club spent \$608 on food for a party for its 38 members. The hall they rented costs \$40 per hour. The door prize was worth \$200. Let a be the amount spent on food per person and b be the number of hours they rented the hall.

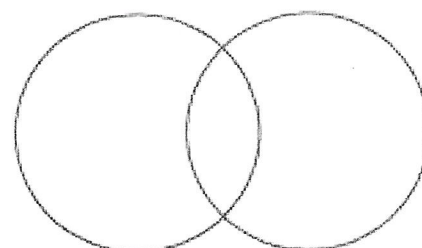
Part A

Write an equation to represent how much was spent on this event. Let S be the total amount spent.

Part B

Find how much the club spent on food per person.

15. Complete the Venn diagram to show the common factors of 45 and 75. Then circle the greatest common factor.



45

75

16. Select all the expressions that have a value of $2^2 - 3^3 + 29$.

- ☐ $(78 \div 3) - 2^4$
☐ $8^3 - 14 \times 6^2 - 2$
☐ $-|-6|$
☐ $|-6|$
☐ $7^2 - 3.1 - 19 \times 2.1$

17. Find each quotient.

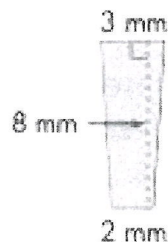
$494 \div 95 =$

$136.8 \div 24 =$

$96.9 \div 19 =$

$43.2 \div 8 =$

18. What is the area of this trapezoid?

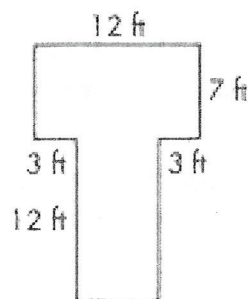


- (A) 8 mm^2 (C) 20 mm^2
 (B) 16 mm^2 (D) 40 mm^2

19. Caroline weighs 41,390,000 milligrams and her baby sister weighs 3,415 grams. What is their total weight in kilograms?

- (A) 4.4805 kg
 (B) 448.05 kg
 (C) 44.805 kg
 (D) 4480.5 kg

20. Meredith drew the shape shown below.



Find the area of the shape. Explain.

21. Chang used a coordinate plane to show where his posters are displayed on his bedroom wall. Three posters are located at $E(5, 3)$, $F(-4, 3)$, and $G(-4, 5)$.

Use absolute values of coordinates to find the distances between points E and F , and between points G and F . Show your work.

22. Let x be the number of hours that Chaya studies for a test and let y be the number of points she receives on the test. For one test, Chaya studied for 5 hours and received 14 points. Select all the equations that could describe Chaya's grades and her study time.

- ☐ $y = 2.8x$
☐ $y = 5x$
☐ $y = x - 9$
☐ $y = \frac{1}{2}x$
☐ $y = x + 9$

23. The table shows the relationship the choir director tries to maintain between the number of sopranos and the number of altos in the chorus. Complete the table using the ratio given.

Chorus Members

Sopranos	Altos
7	5
14	
21	
	20

24. What is the volume of a rectangular prism with $\ell = 4\frac{1}{2}$ cm, $w = 3\frac{1}{2}$ cm, and $h = 6$ cm, in cubic cm?
- (A) $90\frac{1}{2}$ (B) $94\frac{1}{2}$ (C) 95 (D) $95\frac{1}{2}$
25. Larry is a locavore, which means he tries to only eat food produced within 200 miles of his home. Which inequality represents the distance, d , from Larry's home of food that he does not eat?
- (A) $d > 100$ (C) $d < 100$
 (B) $d > 200$ (D) $d < 200$

26. The number of students in each of the classes that Julia is taking and each of the classes that Mason is taking are shown below.

Julia's classes: 25, 23, 28, 32, 27

Mason's classes: 20, 26, 24, 31, 29

Select all the statements that are true.

- ☐ The mean is greater for Mason's classes than for Julia's classes.
☐ For both sets of data, the median is equal to the mean.
☐ The mean absolute deviation (MAD) is greater for Julia's classes than for Mason's classes.
☐ The interquartile range (IQR) is greater for Mason's classes than for Julia's classes.
☐ The numbers of students in Julia's classes are less spread out than those in Mason's classes.

27. Ms. Wertz graded 20% of the tests for her class in 16 minutes.

Part A

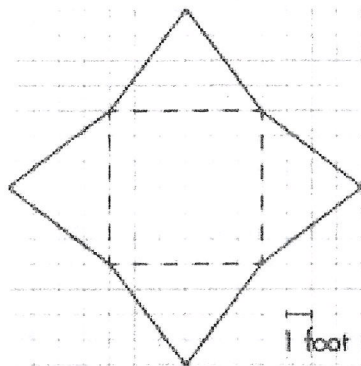
Which equation can be used to find how many minutes it will take to grade all of the tests?

- (A) $0.2m = 16$ (C) $16m = 20$
 (B) $\frac{m}{20} = 16$ (D) $\frac{20}{m} = 16$

Part B

How many minutes will it take to grade all of the tests?

28. Logan used the net below to design a nylon tent.



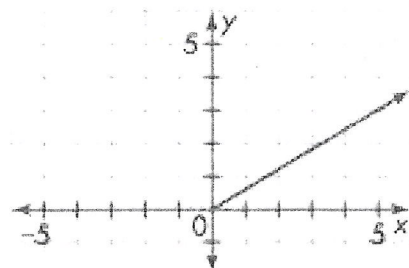
Part A

What shape will the tent have?

Part B

How much nylon will Logan need to make the tent? Explain.

29. Let x be the profit of a company and let y be the amount the company owner makes, both in thousands of dollars. The graph shows the relationship between x and y . Which equation describes this relationship?



- (A) $y = x - 3$ (C) $y = 0.6x$
 (B) $y = 5x$ (D) $y = x + 5$

30. The area of the rectangular floor in Tamara's room is $95\frac{5}{6}$ square feet. The width of the room is $8\frac{1}{3}$ feet.

Part A

Estimate the length of Tamara's room. Explain.

Part B

Find the exact length of Tamara's room. Was your estimate an overestimate or an underestimate?

Part C

Suppose the ceiling is 12 feet high. If Tamara orders 480 square feet of wallpaper, will she have enough to cover all four walls? Explain.