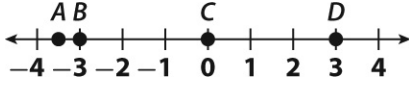


1. Which of the following points is graphed at the opposite of  $-2$  on the number line below?



- A A                                  C C  
B B                                  D D
2. Which of the following pairs shows an integer and its opposite?

- A 7,  $-7$   
B 7,  $\frac{1}{7}$   
C  $-7, -\frac{1}{7}$   
D  $-\frac{1}{7}, \frac{1}{7}$

3. Which number has the same absolute value as  $-5$ ?

- A  $-\frac{1}{5}$                                   C 0  
B  $\frac{1}{5}$                                       D 5

4. What is the greatest common factor of 30 and 45?

- A 1                                      C 15  
B 5                                      D 30

5. What is the least common multiple of 16 and 24?

- A 4                                      C 24  
B 16                                     D 48

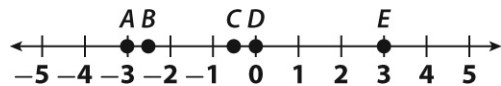
6. Jason plotted points on a number line at the four values below.

$$0.75, -\frac{2}{3}, -0.4, \frac{7}{8}$$

Which of these values is farthest from zero?

- A 0.75                                  C  $-0.4$   
B  $-\frac{2}{3}$                                       D  $\frac{7}{8}$

7. Which pair of points graphed below have values that are opposites?



- A A and B                              C C and E  
B B and D                              D A and E

8. Susie divided a 9-pound bag of apples into 5 equal piles. How many pounds of apples are in each pile?

A  $\frac{1}{5}$  lb

C  $1\frac{4}{5}$  lb

B  $\frac{5}{9}$  lb

D  $1\frac{5}{4}$  lb

9. Which of the following expressions is equivalent to the expression below?

$$\frac{4}{7} \times \frac{5}{9}$$

A  $\frac{5}{9} \div \frac{4}{7}$

C  $\frac{4}{9} \div \frac{5}{7}$

B  $\frac{4}{7} \div \frac{5}{9}$

D  $\frac{4}{7} \div \frac{9}{5}$

10. Leah cut a  $7\frac{1}{2}$ -inch piece of ribbon into  $\frac{3}{4}$  pieces that are each  $\frac{3}{4}$  of an inch long. How many pieces of ribbon did she cut?

A 6 pieces

C 10 pieces

B 9 pieces

D 15 pieces

11. Jonas is making a trail mix recipe that calls for  $3\frac{1}{2}$  cups of nuts and  $1\frac{1}{2}$  cups of raisins. Jonas mixes the nuts and raisins together. He will then divide the mixture into plastic bags containing  $\frac{1}{4}$  cup of trail mix in each bag. How many plastic bags does Jonas need?

A 1

C 20

B 5

D 50

12. Jinwon hit a golf ball 145.7 yards. Kayla hit a golf ball 122.95 yards. How much farther did Jinwon hit a golf ball?

A 22.75 yards

B 30.25 yards

C 80.12 yards

D 108.36 yards

13. Gabriel drives 80 kilometers in one hour. If he drives at the same speed, how many kilometers can he drive in 3.75 hours?

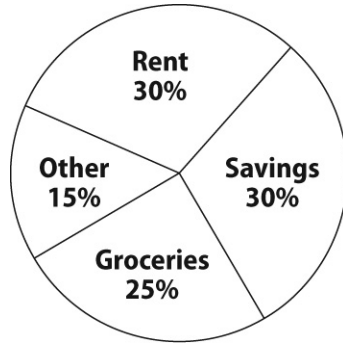
A 24.75 km

C 80.75 km

B 30 km

D 300 km

14. Alissa's budget is shown in the circle graph below. Her total monthly budget is \$1,500. How much does Alissa spend on rent?



- A \$250                      C \$450  
B \$300                      D \$500

15. In Evan's math class, there are 17 boys and 21 girls. Which of the following is the ratio of boys to girls in the class?

- A  $\frac{17}{38}$                       C  $\frac{17}{21}$   
B  $\frac{21}{38}$                       D  $\frac{21}{17}$

16. Zach is making a recipe that requires 1 cup of vinegar and 3 cups of water. Which of the following combinations shows the same ratio of vinegar to water?

- A 2 cups of vinegar to 3 cups of water  
B 2 cups of vinegar to 6 cups of water  
C 3 cups of vinegar to 1 cup of water  
D 3 cups of vinegar to 6 cups of water

17. Nora bikes 30 miles per hour. Jiro bikes 45 miles per hour. Nora and Jiro each bike for 5 hours. How many more miles does Jiro bike?

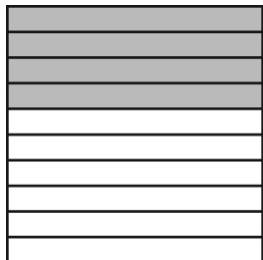
- A 15 mi                      C 150 mi  
B 75 mi                      D 225 mi

18. The table below shows the number of books on shelves at a library. Which of the following represents the number of books?

<b>Books</b>	42	63	105	147
<b>Shelves</b>	2	3	5	7

- A shelves  $\times$  3  
B shelves  $\times$  21  
C shelves  $+$  28  
D shelves  $+$  42

19. What percent of the rectangle below is shaded?



- A 20%                      C 40%  
B 30%                      D 80%

20. Which number is greater than the absolute value of  $-\frac{5}{9}$ ?

- A  $-1$                       C  $0.2$   
B  $-\frac{2}{3}$                       D  $\frac{4}{7}$

21. What is the value of the expression below?

$$205 - (7 - 2)^3 \div 5$$

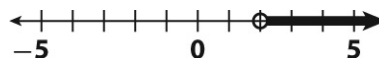
- A 16                      C 40  
B 36                      D 180

22. Which of the following expressions is equivalent to the expression below?

$$2(7x + 3 - x)$$

- A  $12x + 6$   
B  $14x + 6$   
C  $17x - 2$   
D  $11x + 3$

23. Which inequality is shown on the number line below?



- A  $p < 2$   
B  $p \leq 2$   
C  $p > 2$   
D  $p \geq 2$

24. Write an algebraic expression for the phrase below.

12 less than twice a number  $n$

- A  $12 - n - n$                       C  $6 - 2n$   
B  $2n - 12$                       D  $12n - 2$

25. Evaluate the expression below for  $x = 4$ .

$$6(x + 7)$$

- A 24  
B 31  
C 42  
D 66

26. A high-school band has  $d$  drummers and 10 violinists. There are 2 more violinists than drummers. Which of the following equations represents the situation?

- A  $d = 10 + 2$   
B  $d = 10 - 2$   
C  $d = 2 - 10$   
D  $d = 2 \times 10$

27. A student bought a book for \$7.50 and a pen. The total cost was \$9.50. Which of the following equations can be used to find the cost of the pen?

- A  $p = 7.5b$   
B  $p = 9.5b$   
C  $9.50 + p = 7.50$   
D  $7.50 + p = 9.50$

28. Which of the following is a solution to the equation below?

$$\frac{m}{3} = 15$$

- A  $m = 5$                       C  $m = 30$   
B  $m = 18$                      D  $m = 45$

Use the table for 29 and 30.

**Auto Repair Charges**

<b>Hours, <math>x</math></b>	2	5	7
<b>Charge, <math>y</math> (\$)</b>	180	450	630

29. Which equation expresses  $y$  in terms of  $x$ ?

- A  $y = 90x$   
B  $y = 180x$   
C  $x = 90y$   
D  $x = 2y$

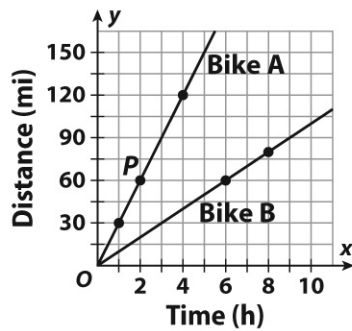
30. What is the charge for a repair that takes 1.5 hours?

- A \$360                              C \$150  
B \$270                              D \$135

Use the graph for 31–33.

B 39 ft

D 111 ft



31. What are the coordinates of point  $P$ ?

- A (2, 8)                      C (60, 2)  
 B (2, 60)                     D (60, 8)

32. What is the dependent variable?

- A Bike A                      C time  
 B Bike B                     D distance

33. Which equation represents Bike B?

- A  $y = 6x$   
 B  $y = 10x$   
 C  $y = 60x$   
 D  $y = 80x$

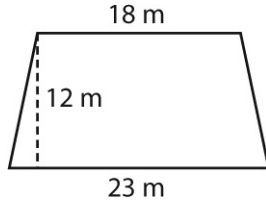
34. A parallelogram has a base of 16 centimeters and a height of 4 centimeters. What is the area of the parallelogram?

- A  $16 \text{ cm}^2$   
 B  $32 \text{ cm}^2$   
 C  $64 \text{ cm}^2$   
 D  $128 \text{ cm}^2$

35. A rectangular prism has a volume of 577.2 cubic feet. The prism is 5.2 feet long and 7.4 feet wide. What is the height of the prism?

- A 15 ft                      C 78 ft

36. What is the area of the trapezoid below?

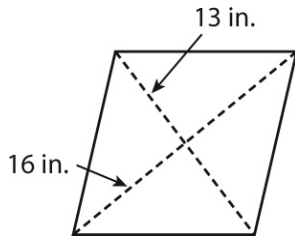


- A  $216 \text{ m}^2$                       C  $2,484 \text{ m}^2$   
B  $246 \text{ m}^2$                       D  $4,968 \text{ m}^2$

37. A right triangle has a height of 21 centimeters and a base of 11.6 centimeters. What is the area of the triangle?

- A  $121.8 \text{ cm}^2$                       C  $487.2 \text{ cm}^2$   
B  $243.6 \text{ cm}^2$                       D  $5,115.6 \text{ cm}^2$

38. What is the area of the rhombus shown below?

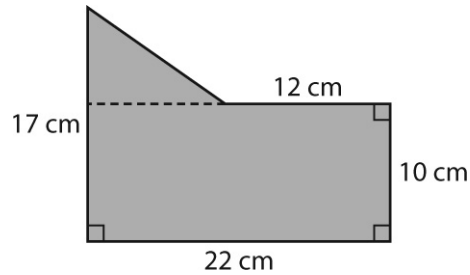


- A  $3 \text{ in}^2$                               C  $208 \text{ in}^2$   
B  $104 \text{ in}^2$                           D  $416 \text{ in}^2$

39. A lawn in the shape of a trapezoid has an area of 1,833 square meters. The length of one base is 52 meters, and the length of the other base is 42 meters. What is the height of the trapezoid?

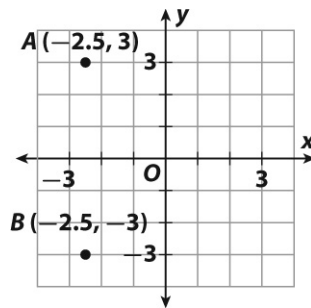
- A 35.25 m  
B 39 m  
C 43.6 m  
D 94 m

40. What is the area of the polygon shown below?



- A  $112 \text{ cm}^2$       C  $160 \text{ cm}^2$   
 B  $136 \text{ cm}^2$       D  $255 \text{ cm}^2$

41. What is the distance between points  $A$  and  $B$  on the grid?



- A 3 units      C 6 units  
 B 4.5 units      D 6.5 units

42. Charlene is wrapping the box below. How much wrapping paper will she need?

- A  $90 \text{ in}^2$       C  $178 \text{ in}^2$   
 B  $153 \text{ in}^2$       D  $286 \text{ in}^2$

43. A swimming pool in the shape of a rectangular prism is 30 feet long,  $15\frac{1}{2}$  feet wide, and 6 feet deep. How much water could the swimming pool hold?

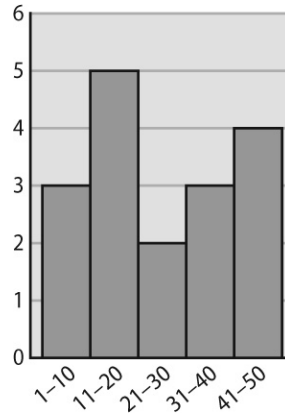
- A  $465 \text{ ft}^3$       C  $1,860 \text{ ft}^3$   
 B  $930 \text{ ft}^3$       D  $2,790 \text{ ft}^3$



44. Sandra worked 6.2 hours on Wednesday, 5.5 hours on Thursday, and 3.5 hours on Friday. Which of the following is closest to the mean number of hours she worked over the three-day period?

A 3 h                      C 5 h  
B 4 h                      D 6 h

45. The histogram below shows the number of hours per month students in Mr. Carter's class watch television. How many students watch television between 11 and 20 hours per month?



A 2  
B 4  
C 5  
D 10