

Directions: Answer the following question(s).

- 1 Select *all* expressions that are equivalent to  $8r + 16$ .

A.  $8(r + 2)$   
B.  $8r(r + 2)$   
C.  $4(4r + 12)$   
D.  $4(2r + 4)$

- 2 A recipe requires  $\frac{1}{4}$  of a cup of cranberries for 1 batch of scones.

How many batches of scones can be made

using  $6\frac{1}{2}$  cups of cranberries?

A.  $\frac{13}{8}$  batches  
B. 24 batches  
C.  $24\frac{1}{2}$  batches  
D. 26 batches

- 3 Maria has planted tulips and roses in her garden. The ratio of tulips to total flowers in her garden is 3:8.

Select *all* of the statements that are true about Maria's garden.

A. The ratio of roses to tulips in Maria's garden is 3:5.  
B. The ratio of total flowers to roses in Maria's garden is 8:5.  
C. The ratio of total flowers to tulips in Maria's garden is 8:3.  
D. There is a greater number of tulips in the garden than roses.  
E. For every 8 flowers in Maria's garden, there are 3 roses.

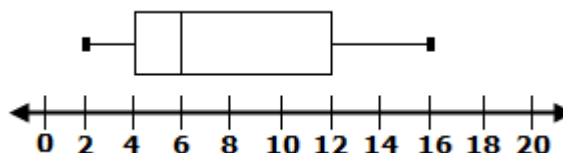
- 4 Which of the following expressions is equivalent to  $\frac{1}{3} \div \frac{3}{4}$ ?

A.  $\frac{1}{3} \times \frac{3}{4}$   
B.  $\frac{3}{1} \times \frac{3}{4}$   
C.  $\frac{3}{1} \times \frac{4}{3}$   
D.  $\frac{1}{3} \times \frac{4}{3}$

- 5 Which inequality means that  $-4$  is to the *right* of the other number on a number line?

A.  $-4 < -2$   
B.  $2 > -4$   
C.  $-4 > -9$   
D.  $9 > -4$

- 6 The following box plot represents the number of candy bars sold by individual members of Oakdale's sixth-grade class.



Which of the following statements, based on the box plot, are true? Select *all* that apply.

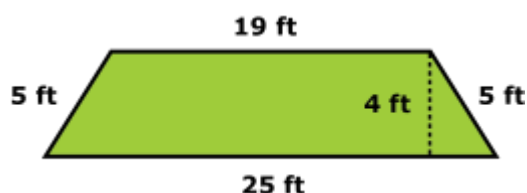
A. The most candy bars sold was 20 bars.  
B. The fewest candy bars sold was two bars.  
C. More students sold more than six candy bars.  
D. The interquartile range of the data is 12 candy bars.  
E. The median number of candy bars sold was six candy bars.

Directions: Answer the following question(s).

7 A student needs to select a statistical question to research for a project. Which of the following questions should the student select?

- A. How many days have I been absent from school this year?
- B. How many students in the school were absent on November 1<sup>st</sup> of this school year?
- C. How many days have each of the students in my class been absent this month?
- D. How many students in my class were absent last Wednesday?

8 Find the area of this isosceles trapezoid:



- A.  $54 \text{ ft}^2$
- B.  $82 \text{ ft}^2$
- C.  $88 \text{ ft}^2$
- D.  $91 \text{ ft}^2$

9 Which of the following number sentences show the correct method to find 43% of 59? Select two that apply.

- A.  $43 \times 59$
- B.  $\frac{43}{100} \times 59$
- C.  $0.43 \times 59$
- D.  $0.43 \times 0.59$

10 Juliet asked each person visiting an ice cream truck how old they were. Their ages are shown.

27, 24, 13, 19, 8, 16, 11, 22, 7, 2, 3, 5, 23, 13, 23, 28

Which histogram correctly represents the data?



Directions: Answer the following question(s).

- 11 There are 25 students in Mrs. Murphy's math class. Of these students, 10 have brown hair, 8 have black hair, 5 have blonde hair, and 2 have red hair. What percentage of students in Mrs. Murphy's class have blonde hair?

A. 8%  
B. 20%  
C. 40%  
D. 80%

- 12 Julian and Marco are both trying to break the record number of touchdowns for their school's football team. Julian needs to score more than 6 touchdowns during the last 3 games of the season to break the record. Marco needs to score more than 4 touchdowns during the last 3 games of the season.

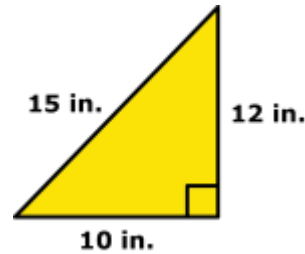
Select the pair of inequalities that represent the number of touchdowns both Julian,  $j$ , and Marco,  $m$ , need to score in order to break the school record.

A.  $j > 6$  and  $m > 3$   
B.  $j > 3$  and  $m > 4$   
C.  $j > 6$  and  $m > 4$   
D.  $j < 6$  and  $m < 4$

- 13 Select *all* equations that have  $d = 5$  as a solution.

A.  $d + 3 = 8$   
B.  $4 + d = 10$   
C.  $6 \times d = 30$   
D.  $2d = 7$

- 14 A right triangle is shown.



What is the area of the right triangle?

A. 37 in.<sup>2</sup>  
B. 60 in.<sup>2</sup>  
C. 90 in.<sup>2</sup>  
D. 120 in.<sup>2</sup>

Directions: Answer the following question(s).

- 15 Mario is saving his money in order to buy a new video game. He decides to save \$5 of his allowance every week. The equation he writes to describe the total amount of money he will save each week is shown below.

$$T = 5w$$

$T$  = total amount of money saved

$w$  = number of weeks Mario has been saving money

Which of the following tables is equivalent to Mario's equation?

A.

| Week | Total Amount of Money |
|------|-----------------------|
| 3    | \$15                  |
| 4    | \$25                  |
| 5    | \$35                  |

B.

| Week | Total Amount of Money |
|------|-----------------------|
| 1    | \$5                   |
| 3    | \$15                  |
| 5    | \$25                  |

C.

| Week | Total Amount of Money |
|------|-----------------------|
| 2    | \$20                  |
| 4    | \$40                  |
| 6    | \$60                  |

D.

| Week | Total Amount of Money |
|------|-----------------------|
| 1    | \$5                   |
| 2    | \$15                  |
| 3    | \$25                  |

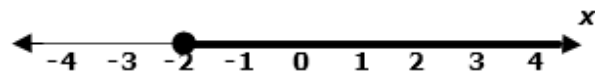
- 16 Which of the following statements about opposites is true?

- A. The opposite of 5 is  $-5$ .
- B.  $-(-8) = -8$
- C. The opposite of 0 is 0.
- D.  $-(-2) = 2$

- 17 Collin is collecting rocks for a science project. So far, he has collected 36 rocks, which is 90% of the total he needs. How many total rocks does Collin need for his science project?

- A. 4
- B. 40
- C. 76
- D. 400

- 18 Does the number line below represent the solutions to the inequality  $x > -2$ ?



- A. Yes, because there is a closed dot, and not an open dot, at  $-2$ .
- B. Yes, because everything to the right of  $-2$  is shaded.
- C. No, because there is a closed dot, and not an open dot, at  $-2$ .
- D. No, because everything to the right of  $-2$  is shaded.

- 19 Which of these expressions is equivalent to  $z + z + z + z$ ?

- A.  $4 + z$
- B.  $4 + z^4$
- C.  $4z$
- D.  $4z^4$

- 20 Point  $R$  is located at  $(3, -4)$ . Which point represents a reflection across the  $y$ -axis?

- A.  $(-3, 4)$
- B.  $(-3, -4)$
- C.  $(-4, 3)$
- D.  $(4, -3)$

Directions: Answer the following question(s).

- 21 A subway in New York is located at 25 feet below sea level. In Chicago a train is 27 feet above sea level. How much higher is the train than the subway?

A. -52 feet  
B. -2 feet  
C. 2 feet  
D. 52 feet

- 22 A gift box has dimensions of:  $8\frac{1}{2}$  inches,  $5\frac{1}{2}$  inches, and  $2\frac{1}{2}$  inches, respectively. How many cubes with side lengths of  $\frac{1}{2}$  inches would be needed to fill the gift box?

A. 116.875 cubes  
B. 163.5 cubes  
C. 935 cubes  
D. 1870 cubes

- 23 What is 80% of 40?

A. 8  
B. 32  
C. 40  
D. 72

- 24 Solve.

$$.806 \div 1.3 =$$

A. .0512  
B. .062  
C. .512  
D. .62

- 25 Multiply.

$$0.43 \times 0.57 =$$

A. 24.51  
B. 23.31  
C. 0.2451  
D. 0.2331

- 26 Which expression represents the product of 64 and  $x$ ?

A.  $64 - x$   
B.  $64 + x$   
C.  $64x$   
D.  $\frac{64}{x}$

- 27 Use the chart to answer the following question.

| City Name     | Temperature |
|---------------|-------------|
| Elk Grove     | -15 degrees |
| Moosehaven    | -8 degrees  |
| Kingston      | 4 degrees   |
| Reston        | -1 degree   |
| National City | 2 degrees   |

According to the chart, which list is ordered from least to greatest temperature?

A. -15, -8, 4, -1, 2  
B. -15, -8, -1, 2, 4  
C. -1, 2, 4, -8, -15  
D. 4, 2, -1, -8, -15

- 28 Find the greatest common factor (GCF) of 40 and 60.

A. 5  
B. 20  
C. 100  
D. 120

Directions: Answer the following question(s).

- 29 Mallory has been given 4 days to read 180 pages. What is the minimum rate Mallory can read in order to finish on time?

A. 20 pages per day  
B. 35 pages per day  
C. 45 pages per day  
D. 60 pages per day

- 30 The box below shows the number of students in each seventh grade class at Lake Middle School.

23, 30, 29, 29, 30, 30, 25

What is the mean of these data?

A. 30  
B. 29  
C. 28  
D. 27

- 31 Which expression below has the same value as  $7^3$ ?

A.  $3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 \cdot 3$   
B.  $7 \cdot 7 \cdot 7$   
C.  $7 \cdot 3$   
D. 73

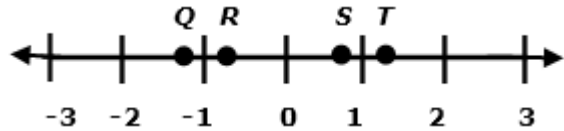
- 32 Ms. North finished grading the history test she gave her class. The test scores of the eleven boys in the class are shown below.

69, 63, 64, 62, 85, 82, 98, 91, 86, 86, 94

What is the median score?

A. 88  
B. 86  
C. 85  
D. 82

- 33 Which point shows the location of  $-\frac{7}{8}$  on the number line?



A. point Q  
B. point R  
C. point S  
D. point T

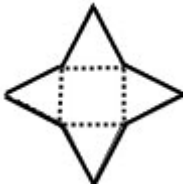
- 34 If  $\frac{x}{4} = 21$ , what is the value of  $x$ ?

A. 84  
B. 17  
C.  $\frac{21}{4}$   
D.  $\frac{4}{21}$

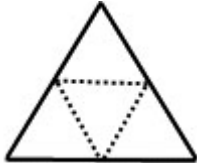
Directions: Answer the following question(s).

- 35 Which figure can form a square pyramid when folded on the dotted lines without overlapping?

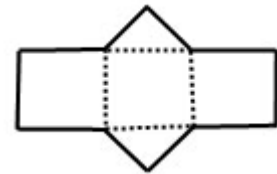
A.



B.



C.



D.



- 36 The head of the math department is studying the student scores on last year's basic skills test. She has determined the median student score was 70%. The upper quartile of the scores was 85%.

Approximately what percentage of the students who took the test earned scores between 70% and 85%?

- A. 15%  
B. 25%  
C. 50%  
D. 85%

- 37 If the values of the expressions below were plotted on a number line, which expression would be closest to 3?

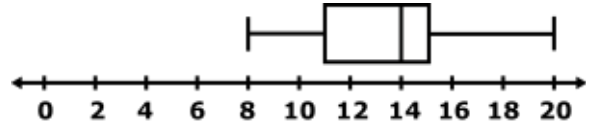
- A.  $|-12|$   
B.  $|-2|$   
C.  $|5|$   
D.  $|9|$

- 38 Consider this data set.

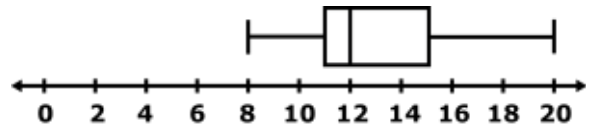
12, 14, 20, 8, 12, 10, 14, 16, 12

Which box plot displays the data shown?

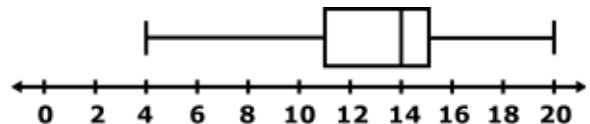
A.



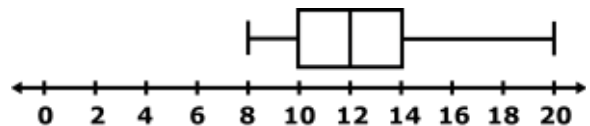
B.



C.



D.



- 39 Select *all* the sets of numbers that give possible values for  $w$  in the inequality  $w > -5.45$ .

- A.  $\{-2.6, -0.89, -0.4\}$   
B.  $\{2.25, 4.1, 6.88\}$   
C.  $\{-3.5, -4.06, -5.75\}$   
D.  $\{-5.81, -6.24, -6.8\}$

Directions: Answer the following question(s).

- 40 The price at a laser tag arena is based on the number of games played, as shown in the table below. What is the price for 12 games of laser tag at the arena?

| Number of Games | Price |
|-----------------|-------|
| 2               | \$8   |
| 3               | \$12  |
| 5               | \$20  |
| 7               | \$28  |
| 10              | \$40  |

- A. \$44  
B. \$48  
C. \$52  
D. \$56

- 41 The height above the ground of a person riding an escalator is shown in the table below. What is the missing value in the table?

| Time Since Getting on Escalator | Height Above the Ground |
|---------------------------------|-------------------------|
| 2 seconds                       | 18 inches               |
| 5 seconds                       | 45 inches               |
| 7 seconds                       | ?                       |
| 10 seconds                      | 90 inches               |
| 14 seconds                      | 126 inches              |

- A. 54 inches  
B. 63 inches  
C. 72 inches  
D. 81 inches

- 42 A 40 pound animal sunk 2.5 inches deep into a mud pile. At this rate, how deep would a 140 pound animal sink?

- A. 2.5 inches  
B. 8.75 inches  
C. 10 inches  
D. 22.4 inches

- 43 A ball dropped from the roof of a 120 foot high building took 4 seconds to reach the ground. What was the average speed of the ball during its fall?

- A. 480 feet per second  
B. 124 feet per second  
C. 30 feet per second  
D.  $\frac{1}{30}$  feet per second

Directions: Answer the following question(s).

44 How many inches are in  $7\frac{1}{2}$  feet?

- A. 75 inches
- B. 84 inches
- C. 89 inches
- D. 90 inches

45 What is 100% of 80?

- A. 8
- B. 80
- C. 800
- D. 8000

46 Calculate the value of the expression shown.  
 $13,140 \div 12$

- A. 110
- B. 111
- C. 1095
- D. 1212

47 What number makes this equation true?

$$\frac{4}{9} \div \frac{\boxed{\phantom{000}}}{9} = \frac{4}{5}$$

- A. 0
- B. 4
- C. 5
- D. 9

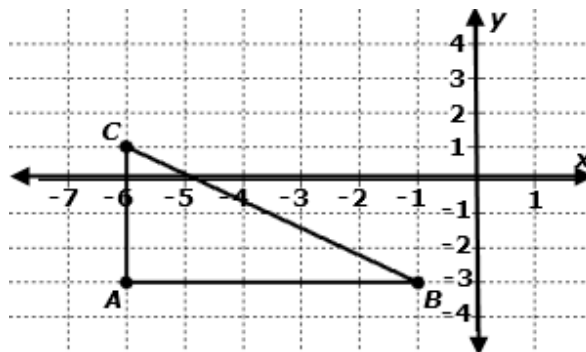
48 Find the Least Common Multiple (LCM) of 8 and 10.

- A. 2
- B. 18
- C. 40
- D. 80

49  $43.82 + 7.4 =$

- A. 41.22
- B. 44.56
- C. 51.22
- D. 117.82

50 What is the length of side AB of the triangle shown?



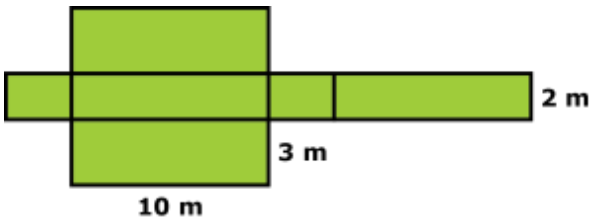
- A. 4 units
- B. 5 units
- C. 6 units
- D. 7 units

51 If  $m = 8$ , then what is the answer for  $5m + 6$ ?

- A. 11
- B. 13
- C. 34
- D. 46

Directions: Answer the following question(s).

- 52 Using the dimensions shown, you could create a rectangular prism. Calculate the surface area for the rectangular prism.



- A.  $30 \text{ m}^2$
- B.  $56 \text{ m}^2$
- C.  $60 \text{ m}^2$
- D.  $112 \text{ m}^2$

- 53 A right rectangular prism has edges of:  $3\frac{1}{4}$  inches,  $2\frac{1}{2}$  inches, and  $1\frac{1}{4}$  inches, respectively. How many cubes with side lengths of  $\frac{1}{4}$  inches would be needed to fill the prism?

- A. 7 cubes
- B. 10.156 cubes
- C. 550 cubes
- D. 650 cubes

54



Calculate the volume of the rectangular prism in the diagram above.

- A.  $20 \text{ cm}^3$
- B.  $65 \text{ cm}^3$
- C.  $80 \text{ cm}^3$
- D.  $130 \text{ cm}^3$

- 55 Simplify.

$$6 \times 10^2 + 45$$

- A. 165
- B. 645
- C. 870
- D. 3645