

The cost for 10 ounces of organic blueberries is \$2.70. Which equation can be used to determine x , the cost, in dollars, for 30 ounces of organic blueberries?

- Ⓐ $\frac{10}{2.7} = \frac{x}{30}$
- Ⓑ $\frac{2.7}{10} = \frac{30}{x}$
- Ⓒ $\frac{10}{2.7} = \frac{30}{x}$
- Ⓓ $\frac{2.7}{30} = \frac{x}{10}$

1

Which expression has the same value as $-\frac{3}{8} - \frac{7}{8}$?

Prove it.

- Ⓐ $\frac{3}{8} + \frac{7}{8}$
- Ⓑ $-\frac{3}{8} + \frac{7}{8}$
- Ⓒ $\frac{3}{8} + \left(-\frac{7}{8}\right)$
- Ⓓ $-\frac{3}{8} + \left(-\frac{7}{8}\right)$

2

A gardener uses a total of 61.5 gallons of gasoline in one month. Of the total amount of gasoline, $\frac{3}{5}$ was used in his lawn mowers. How many gallons of gasoline did the gardener use in his lawn mowers in the one month?

3

On a map, two cities are 2.8 inches apart. The map has a scale of 1 inch to 25 miles. How far apart, in inches, would the same two cities be on a map that has a scale of 1 inch to 40 miles?

4

What are the values of the expressions below?

1) $-36 \div 9 + 3(-7) + 2$

2) $-3\frac{1}{4} \div \frac{1}{3}$

5

The list below describes the number of water bottles manufactured in three months.

- February: 4,100 water bottles
- March: 7% more water bottles than in February
- April: 500 more water bottles than in March

What is the percent increase, to the nearest percent, in the number of water bottles the company manufactured from February to April?

6

The graph below represents the amount Joseph earns, in dollars, for the number of hours he works. Which equation can be used to determine the earnings for every hour he works?

(A) $y = 1.5x$

(C) $x = 1.5y$

(B) $y = 15x$

(D) $x = 15y$



7

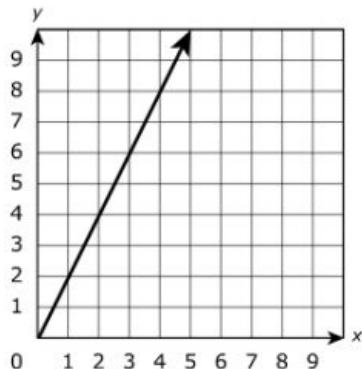
Airline A and Airline B offer travel discounts to the same destination. The original ticket prices and discounts are described below.

- Airline A: a discount of 25% off the original ticket price of \$150
- Airline B: a discount of 13 off the original ticket price of \$180

Which airline offers the least expensive ticket? Prove it.

8

The graph shows a proportional relationship containing points like (3, 6) and (4, 8). What is the constant of proportionality?



What is another name for constant of proportionality?

9

This list shows the number of people surveyed at a movie theater on each of the days who were younger than 20 years old: **Friday: 38, Saturday: 30, Sunday: 47**

Which conclusion is best supported by the results of the survey?

- A. The greatest number of people saw the movie on Friday.
- B. People younger than 20 tend to watch movies on the weekends.
- C. About $\frac{1}{2}$ of the people who saw the movie that weekend were younger than 20 years old.
- D. The total number of people who saw the movie on Friday, Saturday, and Sunday was 115.

10

A student wrote steps to simplify an expression below:

In which step did they make their error?

Step 1: $\frac{5}{6}m + 12 - \frac{2}{3}m - 6$

Step 2: $\frac{5}{6}m - \frac{2}{3}m + 12 - 6$

Step 3: $\left(\frac{5}{6}\right)\left(-\frac{2}{3}\right)m + 12 - 6$

Step 4: $-\frac{10}{18}m + 6$

What should the correct answer be?

11

A garden is in the shape of a circle with a radius of 10 feet. Edging is placed around the outside of the garden. How much edging, in feet, is needed to go around the garden? Round to the nearest whole number.

12

It costs \$133 to rent a trumpet, plus a monthly fee. A person rents a trumpet for 1 year and 4 months for \$597. How much is the monthly fee?

Write an equation to represent the situation using ***m*** to represent the number of months rented and ***t*** for the total cost.

13

Determine which expressions are equivalent to $\frac{1}{4} - \frac{2}{3} - \left(\frac{1}{2} + \frac{5}{6}\right)$.

A. $\frac{1}{4} - \frac{2}{3} + \left(\frac{1}{2} - \frac{5}{6}\right)$

B. $\frac{1}{4} + \frac{2}{3} + \left(\frac{1}{2} - \frac{5}{6}\right)$

C. $\frac{1}{4} + \left(-\frac{2}{3}\right) - \frac{1}{2} - \frac{5}{6}$

D. $\frac{1}{4} - \frac{2}{3} + \left(-\frac{1}{2}\right) + \left(-\frac{5}{6}\right)$

E. $\frac{1}{4} - \frac{2}{3} - \left(-\frac{1}{2}\right) + \left(-\frac{5}{6}\right)$

14

The price of an item is ***P*** dollars. The sales tax is 7%. Which expressions represent the total cost of an item after tax is applied?

A. $0.07P$

B. $1.07P$

C. $P + 0.07P$

D. $1 + 0.07P$

E. $(1 + 0.07)P$

Prove it.

15

The amount Troy charges to mow a lawn is proportional to the time it takes him to mow the lawn. Troy charges \$30 to mow a lawn that took him 1.5 hours to mow. Which equation models the amount in dollars, ***d***, Troy charges when it takes him ***h*** hours to mow a lawn?

A. $d = 20h$

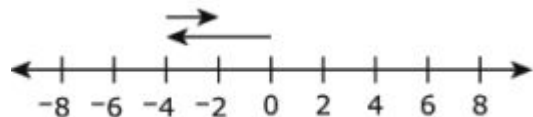
B. $h = 20d$

C. $d = 45h$

D. $h = 45d$

16

Which expressions can be modeled with the following number line:



A. $-2 + 4$

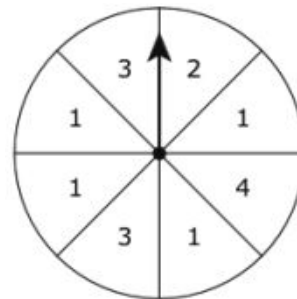
B. $-4 + 2$

C. $-4 - (-2)$

17

The following spinner is spun once.

- Find $P(1)$
- Find $P(\text{less than } 4)$
- Find $P(\text{odd number})$
- Find $P(0)$



18

Simplify the square roots:

$$-\sqrt{81}$$

$$4 - \sqrt{\frac{28}{7}}$$

$$\sqrt{\frac{16}{49}}$$

$$-10 \times \sqrt{\frac{1}{100}}$$

$$\sqrt{\frac{300}{3}}$$

19

What can be done to $\sqrt{35}$ to get 35?

20

#25 Flip your paper over to the backside.

Define (in your own words) the following terms or phrases:

- Inverse (as in “additive inverse” or “inverse operation”)
- Simplify the expression
- Slope (on a graph)
- Mark ups and discounts
- Proportional
- Scale Model/Scale Factor
- Equivalent expression
- Square Root