Primary Prep

Summer Math Packet
Grade 8

2026

Name:_____

1.

Quantities x and y are in a proportional relationship. Complete the table.

x	y
4	16
3	
	8

2.

A car traveled at a constant speed. The graph shows how far the car traveled, in miles, during a given amount of time, in hours.

a. The point $(3.5, 210)$ is on the graph. Explain what this means in terms of the car.

b. Is the point $(1, 60)$ on this graph? Explain how you know.

3.

Evaluate each expression.

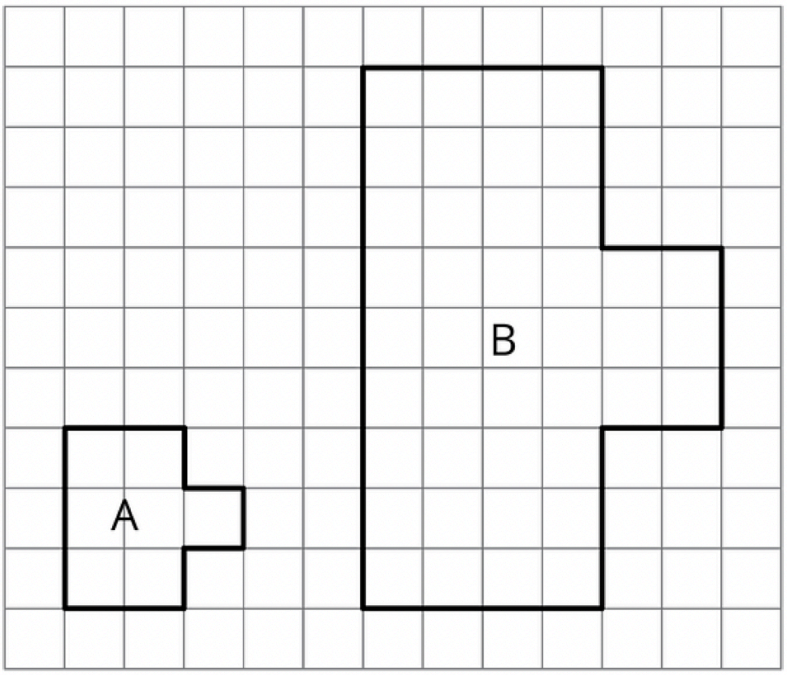
a. $4 \div \frac{1}{3}$

b. $\frac{3}{8} \div \frac{7}{2}$

c. $3\frac{1}{2} \div \frac{7}{4}$

4.

Is Figure B a scaled copy of Figure A? Explain how you know.



5.

To mix a particular shade of purple paint, red paint and blue paint are mixed in the ratio $5:3$. To make 20 gallons of this shade of purple paint, how many gallons of red and blue paint should be used?

6.

Select **all** the tables that could represent proportional relationships.

A.

x	y
2	3
5	7.5
10	15

B.

x	y
0	0
3	7
6	14

C.

x	y
0	2
2	4
4	6

7.

At one gas station, gas costs $2.75 per gallon. Write an equation that relates the total cost, C, to the number of gallons of gas purchased, g.

8.

A store sells ice cream with assorted toppings. They charge $3.00 for an ice cream, plus 50 cents per ounce of toppings.

a. How much does an ice cream cost with 4 ounces of toppings?

9.

Which of these expressions is equivalent to $3(x-2)$?

A. $3x-6$

B. $3x-2$

C. $3x+2$

D. $3x+6$

10.

Which of these expressions is equivalent to $-2(x-5)$?

A. $-2x-5$

B. $-2x+5$

C. $-2x+10$

D. $-2x-10$

11.

For each expression, combine like terms and write an equivalent expression with fewer terms.

a. $4x + 3x$

b. $3x + 5x - 1$

c. $5 + 2x + 7 + 4x$

d. $4 - 2x + 5x$

e. $10x - 5 + 3x - 2$

12.

For each equation, find a value for x that makes the equation true.

a. $x \div 3 = 12$

b. $2x + 3 = 20$

c. $\frac{4}{3}x = \frac{10}{3}$

d. $-4x = -24$

e. $2(x - 4) = 10$

f. $-0.5x + 1.1 = -2.9$

13.

For each equation, determine if $x = 2$ is a solution. Explain or show your reasoning.

a. $-2(x - 4) = 4$

b. $\frac{26}{x} = 13$

c. $-3.8x = -7.4$

d. $4(x - 1) - 3(x - 2) = -8$

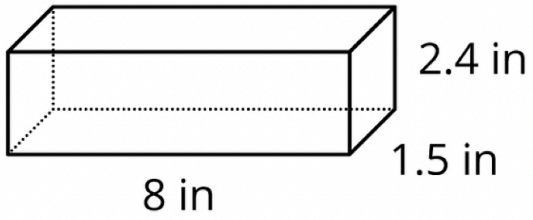
14.

There are 16 cups in a gallon. The equation $g = \frac{1}{16}c$ gives the number of gallons in terms of the number of cups. Write another equation for this situation, giving the number of cups in terms of the number of gallons:

$$c =$$

15.

Here is a rectangular prism.



a. What is the surface area of the prism?

b. What is the volume of the prism?

16.

A circular field has area 14400π square feet.

a. What is the radius of the field?

b. What is the diameter of the field?

c. What is the circumference of the field, to the nearest foot?

17.

A rectangle has length x and width y.

Select **all** the statements that must be true.

A. The perimeter is $x + y$.

B. The perimeter is xy.

C. The perimeter is $2(x + y)$.

D. The perimeter is $2xy$.

E. The perimeter is $2x + 2y$.

F. The area is $x + y$.

G. The area is xy.

H. The area is $2xy$.

18.

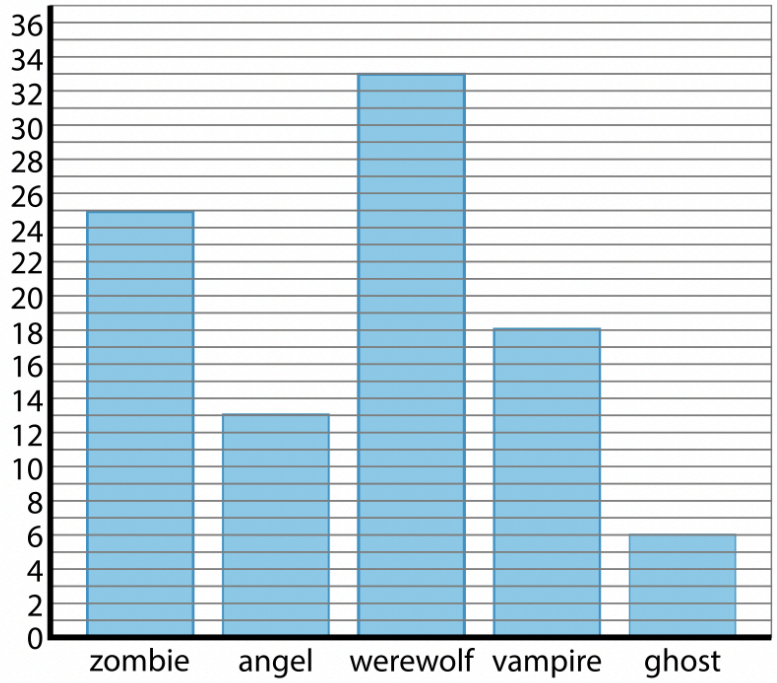
In many schools, students have the choice between taking art, music, or some other elective.

a. At Euclid Middle School, there are 200 students in the 8th grade. 40 students are taking art. What percentage of 8th graders at Euclid Middle School are taking art? Explain or show your reasoning.

b. At Newton Middle School, there are 320 students in the 8th grade. 54 are taking music. What percentage of 8th graders at Newton Middle School are taking music? Explain or show your reasoning.

19.

Students voted for their favorite entry in a Halloween costume contest. Jada recorded the results in a bar graph:



a. Who got more votes: the angel or the zombie?

b. How many votes did the vampire get?

c. Who won the contest?

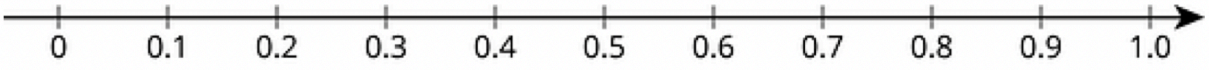
20.

A new phone costs $450. There is a 40% discount on the price of the phone and an 8% sales tax on the discount price. What is the final cost of the phone after the discount and the sales tax?

21.

Plot and label these numbers on the same number line:

$$0.8,\ 0.65,\ 0.27,\ 0.52,\ 0.052$$



22.

Write three other fractions that are equivalent to $\frac{16}{128}$. Explain or show your reasoning.

23.

Find a fraction that is equal to each decimal.

a. 0.4

b. 1.15

c. 0.125

24.

Find a decimal that is equal to each fraction.

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

b. $\frac{271}{100}$

c. $\frac{1}{9}$