



Timester Challenge

Ratio Proportion Algebra Problems



The following table shows a proportional relationship between r and t .
Write an equation to describe the relationship between r and t .

r	t
18	3
42	7
90	15

Bronze ★

The ratio of $x:y$ is 5:7
Circle the correct statement.

x is $\frac{5}{12}$ of y

x is $\frac{7}{5}$ of y

x is $\frac{5}{7}$ of y

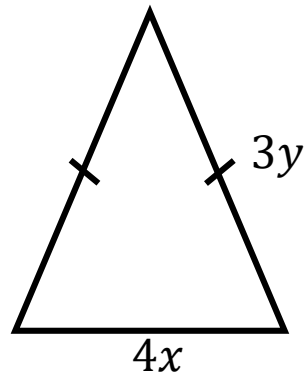
x is $\frac{2}{7}$ of y

Bronze ★

When $2:x = 3:6$, find the value of x .

Silver ★

The ratio of $x:y = 2:3$.
Write an expression for the perimeter of the triangle in terms of x .



Silver ★

Find the unknown value in the proportion
 $(3x + 2):2 = (x + 1):5$
Leave your answer as a fraction in its simplest form.

Gold ★



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Ratio Proportion Algebra Problems



Answers

The following table shows a proportional relationship between r and t .

Write an equation to describe the relationship between r and t . $r:t = 18:3$

r	t
18	3
42	7
90	15

$$\frac{r}{t}:1 = \frac{18}{3} = 1$$

$$\frac{r}{t} = 9$$

$$r = 9t$$

Bronze ★

The ratio of $x:y$ is 5:7

Circle the correct statement.

x is $\frac{5}{12}$ of y

x is $\frac{7}{5}$ of y

x is $\frac{5}{7}$ of y

x is $\frac{2}{7}$ of y

Bronze ★

When $2:x = 3:6$, find the value of x .

$$\frac{2}{x}:1 = \frac{3}{6}:1$$

$$\frac{2}{x} = \frac{3}{6}$$

$$12 = 3x$$

$$x = 4$$
 Silver ★

The ratio of $x:y = 2:3$.

Write an expression for the perimeter of the triangle in terms of x .

$$\frac{x}{y} = \frac{2}{3} \quad 3x = 2y$$

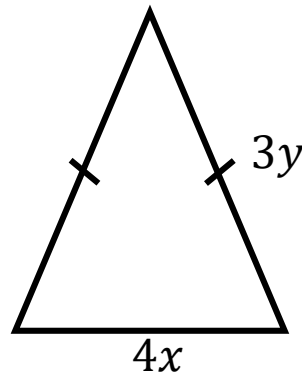
$$y = \frac{3x}{2}$$

$$\text{Perimeter} = 4x + 3y + 3y$$

$$= 4x + 6y$$

$$= 4x + 6\left(\frac{3x}{2}\right)$$

$$= 4x + 9x = 13x$$



Silver ★

Find the unknown value in the proportion

$$(3x + 2):2 = (x + 1):5$$

Leave your answer as a fraction in its simplest form.

$$\frac{3x + 2}{2}:1 = \frac{x + 1}{5}:1$$

$$\frac{3x + 2}{2} = \frac{x + 1}{5}$$

$$5(3x + 2) = 2(x + 1)$$

$$15x + 10 = 2x + 2$$

$$13x + 10 = 2$$

$$13x = -8$$

$$x = -\frac{8}{13}$$

Gold ★