

Ways to find equivalent ratios:

① By \div both terms
by the same amount
(simplify).

$$\frac{10}{12} \xrightarrow{\div 2} \frac{5}{6}$$

② By \times both terms
by same amount

$$\frac{10}{12} \xrightarrow{\times 2} \frac{20}{24}$$

Is the ratio equivalent?

① they simplify to the same thing

$$\frac{8}{12} = \frac{6}{9} \quad ? \quad \text{YES or NO}$$

$$\frac{8}{12} = \frac{2}{3} \quad \frac{6}{9} = \frac{2}{3}$$

② cross-multiplication products are equal

$$\frac{8}{12} = \frac{6}{9}$$

Types of Ratios:

① part to part

ex. bags: girls

② part to whole

ex. bags: total students

③ whole to part

ex. total students: girls

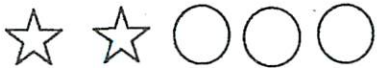
Definition:

A ratio is a

comparison

of two or more numbers.

Example:



The ratio of stars to circles is 2 to 3.

YOU SHOULD KNOW:

There are 3 ways to write a ratio.

1) :

2) to

3) $\frac{a}{b}$

Definition:

A rate is a ratio comparing two numbers with different different.

Example:

A car travels 100 miles in 2 hours.

100 miles
2 hours

YOU SHOULD KNOW:

A unit rate tells the rate in lowest terms, or the amount for one.

Ex. 100 miles = 50 miles
2 hours 1 hour

Definition:

A proportion is an equation showing two ratios are equal.

Example:

$\frac{10}{25} = \frac{40}{100}$

$\frac{10}{25} = \frac{2}{5}$ $\frac{40}{100} = \frac{4}{10} = \frac{2}{5}$

YOU SHOULD KNOW:

In a proportion, if the ratios are equivalent, then the cross - multiplication products are equal. (or they simplify to the same fraction)
Think of equal fractions.