

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
2) 2/3
3) 2:3

Definition
A proportion is an equation showing two ratios are equal.

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

You should know
In a proportion, if the ratios are equivalent, then the cross products are equal.
Think of equal fractions

CROSS-PRODUCT

$$\frac{a}{b} \times \frac{c}{d}$$

$$ad = bc$$

* $b \neq 0$ & $d \neq 0$

Solve for x.

$$\frac{10}{x} \times \frac{2}{3}$$

$$10(3) = 2(x)$$

$$30 = \frac{2x}{2}$$

$$15 = x$$

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ratio- compares quantities

by division. $\frac{2}{3}$ or $\frac{x}{7}$

proportion- a statement that says two ratios

are equal. $\frac{1}{3} = \frac{x}{9}$

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Example 1. A hockey player
Scored 9 goals in 12 games.

Find the ratio of goals to games.

$$\frac{9}{12} = \boxed{\frac{3}{4}}$$

Example 2: Express the
ratio in lowest terms.

18 to 36

$$\boxed{1 \text{ to } 2}$$

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Example 3: Solve the proportion for x.

$$\frac{11}{910-x} = \frac{2}{x}$$

$$11(x) = 2(910-x)$$

$$11x = 1820 - 2x$$

$$+2x \quad \downarrow \quad +2x$$

$$\frac{13x = 1820}{13 \quad 13}$$

$$\boxed{x = 140}$$

Oct 19-10:30 AM

Example 4: The tax on a house whose assessed value is \$45,000 is \$600. Determine the tax on a house with an assessed value of \$112,500, assuming the same tax rate.

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#'s 2-30 even

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