

Solving Proportions



Definition:

A mathematical sentence stating two ratios are equal.

To solve a proportion:
Cross multiply



Model Problems:

1) $\frac{4}{x} \times \frac{6}{8}$

$$\frac{32}{6} = \frac{6x}{6}$$

$$5\frac{2}{6} \text{ or } 5\frac{1}{3} \text{ or } 5.\bar{3} = x$$

2) $\frac{x-2}{4} \times \frac{x+10}{10}$

$$4(x+10) = 10(x-2)$$

$$4x+40 = 10x-20$$

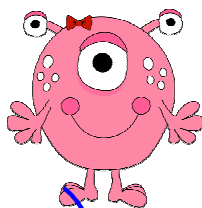
$$\begin{array}{r} -4x \\ \hline 40 = 6x - 20 \end{array}$$

$$\begin{array}{r} +20 \\ \hline 60 = 6x \end{array}$$

$$\frac{60}{6} = \frac{6x}{6}$$

$$x = 10$$

3) $\frac{3}{2x} \times \frac{5}{2x+2}$



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

$$10x = 6x + 6$$

$$\begin{array}{r} -6x \\ \hline 4x = 6 \end{array}$$

$$\frac{4x}{4} = \frac{6}{4}$$

$$x = 1\frac{3}{4} \text{ or } 1\frac{1}{2}$$

4) $\frac{x+5}{2} \times \frac{1}{6}$

$$6(x+5) = 2(1)$$

$$6x + 30 = 2$$

$$\begin{array}{r} -30 \\ \hline 6x = -28 \end{array}$$

$$\frac{6x}{6} = \frac{-28}{6}$$

$$x = -4\frac{4}{6}$$

$$-4\frac{2}{3}$$