

## Proportions

ratio - compares 2 #'s by division

$$3:5 \quad \left( \frac{5}{7} \right) \quad 5 \text{ out of } 10 \quad 5 \text{ to } 10$$

proportion - equation that shows 2 equal ratios (equivalent fractions)

$$\frac{3}{8} \quad \frac{8}{24}$$

$$3 \cdot 24 = 8 \cdot 8$$
$$72 \neq 64$$

NO

\*cross-multiply

$$\begin{array}{r} 24 \\ \times 3 \\ \hline 72 \end{array}$$

$$\frac{5}{6} = \frac{40 \div 8}{48 \div 8} = \frac{5}{6}$$

yes

$$\left( \frac{3.5}{5} = \frac{1.4}{2} \right) \leftarrow$$

$\rightarrow 3.5(2) = 5(1.4)$

$$7 = 7$$

yes

$$\begin{array}{r} 3.5 \\ \times 2 \\ \hline 7.0 \end{array}$$

$$\begin{array}{r} 1.4 \\ \times 5 \\ \hline 7.0 \end{array}$$

## Solve Proportions

$$\frac{c \div 5}{35 \div 5} = \frac{3}{7}$$

$$c = 15$$

$$\frac{c}{35} = \frac{3}{7}$$

$$7c = 35 \cdot 3$$

$$7c = 105$$

$$\frac{7c}{7} = \frac{105}{7}$$

$$c = 15$$

$$\begin{array}{r} 35 \\ \times 3 \\ \hline 105 \end{array}$$

$$\begin{array}{r} 15 \\ 7 \overline{)105} \\ \underline{-70} \\ 35 \end{array}$$

$$\frac{10 \div 2}{8.4 \div 2} = \frac{5}{d}$$

$$d = 4.2$$

$$2 \overline{) 8.4} \\ \underline{-8.4} \\ 0$$

$$\left( \frac{95}{3.6} = \frac{19}{n} \right)$$

$$95n = 3.6(19)$$

$$95n = 68.4$$

$$\frac{95n}{95} = \frac{68.4}{95}$$

$$n = 0.72$$

$$\frac{3.6}{8.4} = \frac{9}{95}$$

$$\frac{00.72}{68.40} \\ \underline{-66.50} \\ 190 \\ \underline{-190} \\ 0$$

$$\frac{1.4}{1.8} = \frac{3.5}{W}$$

$$\rightarrow 1.4W = 1.8(3.5)$$

$$\frac{1.4W = 6.3}{1.4 = 1.4}$$

$$W = 4.5$$

$$\frac{0.7}{0.9} = \frac{3.5}{W}$$

	1	8	
0	0	2	3
	3	4	
6	0	4	5
	5	0	

  

$$\begin{array}{r} 2 \quad \cdot 3 \quad 0 \\ 14 \overline{) 630} \\ \underline{56} \phantom{0} \\ 70 \\ \underline{-70} \\ 0 \end{array}$$

$$\frac{25}{n} = \frac{12}{484}$$

$$n = 100$$

3 pounds for \$1.50  
x pounds for \$4.50

$$\frac{3}{1.50} = \frac{x}{4.50} \quad \frac{\text{pounds}}{\$}$$

$$\frac{3}{x} = \frac{1.50}{4.50} \quad \text{pounds : money}$$

2.7 liters at m dollars

3 liters at \$7

$$\frac{2.7}{3} = \frac{m}{7} \quad \frac{2.7}{m} = \frac{3}{7}$$

A recipe calls for 4½ cups flour for 72 cookies. How many cups of flour would be needed for 48 cookies?

$$\frac{4\frac{1}{2}}{72} = \frac{x}{48}$$

$$\frac{4\frac{1}{2}}{x} = \frac{72}{48}$$

$$\frac{48}{72} = \frac{x}{4\frac{1}{2}}$$
~~$$\frac{48}{72} = \frac{4\frac{1}{2}}{x}$$~~