

Proportions (cross multiply)

Example 1

$$\frac{2}{6} = \frac{c}{23}$$

or simplify first

$$2 \cdot 23 = 6 \cdot c$$

$$\frac{46}{6} = \frac{6c}{6}$$

$$\frac{46}{6} = c$$

$$\frac{2}{3} = \frac{c}{23}$$

$$23 = 3c$$

$$\frac{23}{3} = c$$

Simplify

$$\frac{23}{3} = c$$

They Match!

Example 2

$$\frac{b+21}{16} = \frac{1}{2}$$

$$2(b+21) = 16$$

$$\begin{array}{r} 2b + 42 = 16 \\ -42 \quad -42 \end{array}$$

$$\frac{2b}{2} = \frac{-26}{2}$$

$$b = -13$$

Example 3

$$\frac{4h-15}{9} = \frac{2}{7}$$

$$7(4h-15) = 2 \cdot 9$$

$$\begin{array}{r} 28h - 105 = 18 \\ +105 \quad +105 \end{array}$$

$$\frac{28h}{28} = \frac{123}{28}$$

$$h = \frac{123}{28}$$

Example 4

$$\begin{array}{l} 5 \\ 7 \end{array} = \begin{array}{l} f-16 \\ f \end{array}$$

$$5f = 7(f-16)$$

$$\begin{array}{r} 5f = 7f - 112 \\ -7f \quad -7f \end{array}$$

$$\frac{-2f}{-2} = \frac{-112}{-2}$$

$$\boxed{f = 56}$$

Example 5

$$\begin{array}{l} 7 \\ 8 \end{array} = \begin{array}{l} d-27 \\ d+14 \end{array}$$

$$7(d+14) = 8(d-27)$$

$$\begin{array}{r} 7d + 98 = 8d - 216 \\ -7d + 216 \quad -7d + 216 \end{array}$$

$$314 = 1d$$

$$\boxed{314 = d}$$