

Solve the following equation

for  $y$

$$3(-4x - 2y) - 7 = 2x - 13$$

$$\begin{array}{r} -12x - 6y - 7 = 2x - 13 \\ +12x \qquad \qquad \qquad +12x \end{array}$$

$$\begin{array}{r} -6y - 7 = 14x - 13 \\ +7 \qquad \qquad \qquad +7 \end{array}$$

$$\begin{array}{r} -6y = 14x - 6 \\ -6 \qquad \qquad \qquad -6 \qquad \qquad \qquad -6 \end{array}$$

$$y = -\frac{7}{3}x + 1$$

$$y = mx + b$$

Slope Intercept Equation

$m$  = slope

$b$  =  $y$ -intercept

\*  $m$  should NEVER be a mixed number \*

- This is the one time you can have an improper fraction in your final answer

$$ab - d = c \quad \text{solve for } b$$

$\frac{ab}{a} - \frac{d}{a} = \frac{c}{a}$

$$\frac{ab}{a} = \frac{c+d}{a}$$

$$b = \frac{c+d}{a}$$

OR  ~~$b = \frac{c}{a} + \frac{d}{a}$~~

$$3y - 5x = 9 \quad \text{solve for } y$$

$\frac{3y}{3} - \frac{5x}{3} = \frac{9}{3}$

$$\frac{3y}{3} = \frac{9+5x}{3}$$

$$y = \frac{5}{3}x + 3$$

~~$y = 3 + \frac{5}{3}x$~~

$$P = 2(l+w)$$

Strategy 1

$$\frac{P}{2} = \frac{2(l+w)}{2}$$

$$\frac{P}{2} = l + w$$

$-l \quad -l$

$$\frac{P}{2} - l = w$$

$$\frac{1}{2}P - l = w$$

Strategy 2

Strategy 2

$$P = 2(l+w)$$

$$P = 2l + 2w$$

$-2l \quad -2l$

$$\frac{P-2l}{2} = \frac{2w}{2}$$

$$\frac{P}{2} - l = w$$

$$\frac{3x-2}{m} = t$$

solve for x

strategy 1

$$\cancel{\left(\frac{m}{1}\right)} \frac{3x-2}{\cancel{m}} = t(\cancel{m})$$

$$\cancel{3x-2} = mt$$

$\begin{array}{cc} +2 & +2 \end{array}$

$$\frac{3x}{3} = \frac{mt+2}{3}$$

$$x = \frac{mt+2}{3}$$

strategy 2

$$\cancel{\left(\frac{3x-2}{m}\right)} = \cancel{t}$$

$$mt = \cancel{3x-2}$$

$\begin{array}{cc} +2 & +2 \end{array}$

$$\frac{mt+2}{3} = \frac{3x}{3}$$

$$\frac{mt+2}{3} = x$$

\* Variables when they are multiplied need to be listed in alphabetical order \*

$$A = \frac{1}{2}bh$$

solve for h

Strategy 1

$$[A = \frac{1}{2}bh] \times 2$$

$$\frac{2A}{b} = \frac{bh}{b}$$

$$\boxed{\frac{2A}{b} = h}$$

Strategy 2

$$A = \frac{1}{2}bh$$

$$A = \frac{1}{2} \cdot \frac{b}{1} \cdot \frac{h}{1}$$

$$\left(\frac{2}{b}\right)A = \frac{b}{2}h \left(\frac{2}{b}\right)$$

$$\boxed{\frac{2A}{b} = h}$$

Strategy 3

$$A = \frac{1}{2}bh$$

~~$$A = \frac{bh}{2}$$~~

$$\frac{bh}{b} = \frac{2A}{b}$$

$$\boxed{h = \frac{2A}{b}}$$