

Jan. 29, 2018

Sect. 3-1

Solving Linear Equations  
(Find the variable)

Solve:  $x + 5 = 7$

$$\begin{array}{r} x + 5 = 7 \\ -5 \quad -5 \\ \hline x = 2 \end{array}$$

$$x = 2$$

$$\begin{array}{r} x - 3 = -7 \\ +3 \quad +3 \\ \hline x = -4 \end{array}$$

$$\begin{array}{r} 3x = 21 \\ \hline x = 7 \end{array}$$

$$\begin{array}{r} 2x - 3 = 7 \\ \hline 2x = 10 \end{array}$$

(Note: In the original image, a green diagonal line is drawn through the  $-3$  in the first equation and the  $2$  in the second equation. Red annotations show  $+3$  added to both sides of the first equation and  $+3$  added to the right side of the second equation, and a red horizontal line under the second equation.)

$$x = 5$$

$$\begin{array}{r} 7x + 2 = -1 \\ \underline{-2} \quad \quad \quad \underline{-2} \\ 7x = -3 \\ \underline{7} \quad \quad \quad \underline{7} \\ x = -\frac{3}{7} \end{array}$$

$$\frac{3}{7}x = \frac{6}{21}$$

~~$$\frac{3}{7}x = \frac{6}{21} \cdot \frac{7}{3}$$~~

~~$$x = \frac{42}{63} \div 21$$

$$x = \frac{2}{3} \div 21$$~~

~~$$x = \frac{2}{63}$$~~

$$\frac{2}{3} \cdot \frac{7}{21}$$

$$\begin{array}{r} .2x - .48 \stackrel{+}{=} .26 \\ + .48 \quad | + .48 \\ \hline .2x \quad = .74 \\ \hline .2 \end{array}$$

$$x = 3.7$$

$$\begin{array}{r}
 13y + 48 = 8y - 47 \\
 -8y \qquad \qquad -8y \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 5y + 48 = -47 \\
 -48 \qquad \qquad -48 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 5y = -95 \\
 \hline
 5 \\
 \hline
 \end{array}$$

$$y = -19$$



