

# Equations with Variables on <sup>10/27</sup> BOTH Sides

Before:

$$\begin{array}{r} 3x + 9 = 18 \\ -9 \quad -9 \\ \hline 3x = 9 \\ \frac{3}{3} \quad \frac{3}{3} \quad \boxed{x=3} \end{array}$$

Now:

$$\begin{array}{r} 3x + 18 = 9x \\ -3x \quad -3x \\ \hline 18 = 6x \\ \frac{18}{6} = \frac{6x}{6} \quad \boxed{x=3} \end{array}$$

Oct 24-9:06 AM

## Practice

$$\begin{array}{r} \textcircled{1} \quad 2a + 5 = -8a \\ -2a \quad -2a \\ \hline 5 = -10a \\ \frac{5}{-10} = \frac{-10a}{-10} \end{array}$$

$$\boxed{a = -\frac{1}{2} \text{ or } -0.5}$$

$$\begin{array}{r} \textcircled{2} \quad 4a + 12 = 8a \\ +8a \quad +8a \\ \hline 12a = 12 \\ \frac{12a}{12} = \frac{12}{12} \\ \boxed{a=1} \end{array}$$

Oct 24-9:13 AM

What if...

$$\begin{array}{r}
 2x + 2 = 4x - 4 \\
 \underline{-2x \quad -2x} \\
 2 = 2x - 4 \\
 \underline{+4 \quad +4} \\
 6 = 2x \\
 \frac{6}{2} = \frac{2x}{2} \\
 \boxed{x = 3}
 \end{array}$$

Steps

① Move the Variable term

② Solve the 2-Step Equation

Oct 24-9:18 AM

$$\begin{array}{r}
 9x + 7 = 3x - 5 \\
 \underline{-3x \quad -3x} \\
 6x + 7 = -5 \\
 \underline{-7 \quad -7} \\
 6x = -12 \\
 \frac{6x}{6} = \frac{-12}{6} \\
 \boxed{x = -2}
 \end{array}$$

$$\begin{array}{r}
 9x + 7 = 3x - 5 \\
 \underline{-9x \quad -9x} \\
 7 = -6x - 5 \\
 \underline{+5 \quad +5} \\
 12 = -6x \\
 \frac{12}{-6} = \frac{-6x}{-6} \\
 \boxed{x = -2}
 \end{array}$$

Oct 24-9:24 AM

$$\begin{array}{r} 3 - 4x = 18 + x \\ +4x \quad +4x \\ \hline 3 = 18 + 5x \\ -18 \quad -18 \\ \hline -15 = 5x \\ \frac{-15}{5} = \frac{5x}{5} \\ x = -3 \end{array}$$

$$\begin{array}{r} 2x - 4 = 5x + 8 \\ -2x \quad -2x \\ \hline -4 = 3x + 8 \\ -8 \quad -8 \\ \hline -12 = 3x \\ \frac{-12}{3} = \frac{3x}{3} \\ x = -4 \end{array}$$

Oct 24-9:29 AM