

2-step Equations (with Fractions)

* Solve the Same Way !!

$$\boxed{\frac{x}{2}} - 5 = -2$$

$$\begin{array}{r} +5 \quad +5 \\ \hline \end{array}$$

$$\cancel{2} \cdot \frac{x}{\cancel{2}} = 3 \cdot 2$$

$$\boxed{x = 6}$$

vs. $\boxed{\frac{1}{2}x} - 5 = -2$

$$\begin{array}{r} +5 \quad +5 \\ \hline \end{array}$$

$$\frac{1}{2}x = 3$$

$$\frac{\frac{1}{2}}{\frac{1}{2}} = \frac{3}{\frac{1}{2}} \quad 3 \div \frac{1}{2}$$

$$3 \cdot 2$$

$$\boxed{x = 6}$$

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Examples:

① $\boxed{\frac{5}{3}x} + 5 = 14$

$$\begin{array}{r} -5 \quad -5 \\ \hline \end{array}$$

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

$$\frac{\frac{5}{3}}{\frac{5}{3}} = \frac{9}{\frac{5}{3}}$$

$$\boxed{x = 5\frac{2}{5} \text{ OR } 5.4}$$

② $\boxed{\frac{3}{4}x} + 4 = 12$

$$\begin{array}{r} -4 \quad -4 \\ \hline \end{array}$$

$$\frac{3}{4}x = 8$$

$$\frac{\frac{3}{4}}{\frac{3}{4}} = \frac{8}{\frac{3}{4}} \quad 8 \div \frac{3}{4}$$

$$8 \cdot \frac{4}{3}$$

$$\boxed{x = 10\frac{2}{3} \text{ OR } 10.\bar{6}}$$

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on own

$$\begin{array}{r}
 -5 + \frac{2}{3}x = 10 \\
 +5 \qquad +5 \\
 \hline
 \frac{2}{3}x = 15 \\
 \frac{2}{3} \quad \frac{2}{3} \\
 x = 22\frac{1}{2}
 \end{array}$$

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2-step Equations with the Distributive Property

① $5n - 10 = -30$

$$\begin{array}{r}
 5n - 10 = -30 \\
 +10 \quad +10 \\
 \hline
 5n = -20 \\
 \frac{5n}{5} = \frac{-20}{5} \\
 n = -4
 \end{array}$$

② $5(n-2) = -30$

$$5n - 10 = -30$$

✗ If you have the distributive property, you MUST do that first.

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$$\textcircled{3} \quad 49 = -7(6+W)$$

$$49 = -42 - 7W$$

$$\begin{array}{r} +42 \quad +42 \\ \hline 91 = -7W \end{array}$$

$$\begin{array}{r} 91 = -7W \\ \hline -7 \quad -7 \end{array}$$

$$W = -13$$

$$\textcircled{4} \quad -4(2x-3) = 28$$

$$-8x + 12 = 28$$

$$\begin{array}{r} -12 \quad -12 \\ \hline -8x = 16 \end{array}$$

$$\begin{array}{r} -8x = 16 \\ \hline -8 \quad -8 \end{array}$$

$$x = -2$$

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On Own:

$$-3(x - 4) = 36$$

$$-3x + 12 = 36$$

$$\begin{array}{r} -12 \quad -12 \\ \hline -3x = 24 \end{array}$$

$$\begin{array}{r} -3x = 24 \\ \hline -3 \quad -3 \end{array}$$

$$x = -8$$

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