

Warm-up:

Solve the equation or inequality

$$1. \quad \begin{array}{r} \cancel{-12}x + 15 \\ \hline \cancel{-12} \\ \hline x + 15 = \underline{7 \cdot -12} \\ \hline x + 15 = -84 \\ \hline \cancel{-15} \quad \cancel{-15} \\ \hline x = \underline{-99} \end{array}$$

$$2. \quad \begin{array}{r} -9x - 11 = -35 \\ \hline +11 \quad +11 \\ \hline -9x = \underline{-24} \\ \hline \cancel{-9} \quad \cancel{-9} \\ \hline x = \underline{\frac{24}{9} = \frac{8}{3}} \end{array}$$

$$3. \quad \begin{array}{r} 20 - 6x > 84 \\ \hline \cancel{-20} \quad \cancel{-20} \\ \hline -6x > \underline{64} \\ \hline \cancel{-6} \quad \cancel{-6} \\ \hline x < \underline{-10.\bar{6}} \end{array}$$

$$4. \quad \begin{array}{r} \frac{x}{4} - 24 = -37 \\ \hline +24 \quad +24 \\ \hline \frac{x}{4} = \underline{-13.4} \\ \hline 4 \cdot \frac{x}{4} = \underline{-52} \\ \hline x = \underline{-52} \end{array}$$

$$5. \quad \begin{array}{r} 5x - 26 = -11 \\ \hline +26 \quad +26 \\ \hline 5x = \underline{15} \\ \hline \frac{5x}{5} = \underline{\frac{15}{5}} \\ \hline x = \underline{3} \end{array}$$

Review of Distributive Property & Like Terms:

Simplify.

$$1. \quad \begin{array}{r} 3(x+5) \\ \hline 3x+15 \end{array}$$

$$2. \quad \begin{array}{r} -5(2x+7) \\ \hline -10x-35 \end{array}$$

$$3. \quad \begin{array}{r} -3(-8x-2) \\ \hline 24x+6 \end{array}$$

$$4. \quad \begin{array}{r} 2x - 5y + 8x + 7y - 11 \\ \hline 10x + 2y - 11 \end{array}$$

$$5. \quad \begin{array}{r} -6w + 10x + 4(2w - 7x) \\ \hline -6w + 10x + 8w - 28x \\ \hline 2w - 18x \end{array}$$

Steps for Solving Multi-Step Equations:

1. Distribute if needed.
2. Combine like terms **ON** the SAME side of the =
3. Solve just like before.

**Solve each equation or inequality**

Ex. 1:  $2(y-3) = -18$

$$2y - 6 = -18$$

$$+6 \quad +6$$

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$$2y = -12$$

$$\frac{2y}{2} = \frac{-12}{2}$$

$$y = -6$$

Ex. 2:  $12 + 8x - 5 = -9$

$$-7 + 8x = -9$$

$$+7 \quad +7$$

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$$8x = -16$$

$$\frac{8x}{8} = \frac{-16}{8}$$

$$x = -2$$

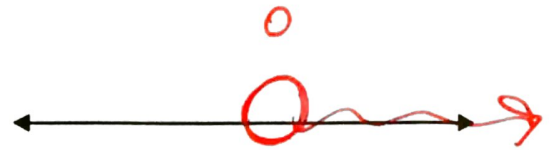
Ex. 3:  $8 > -4(2h - 1) + 4$

$$8 > -8h + 4 + 4$$

$$\cancel{8} > -8h + \cancel{4}$$

$$\cancel{0} > -8h$$

$$0 < h$$



$$h > 0$$

Ex. 4:  $6 - 2(5x + 2) = 32$

$$\cancel{6} - 10x - \cancel{4} = 32$$

$$\cancel{2} - 10x = 32$$

$$\cancel{-10x} = \frac{30}{-10}$$

$$x = -3$$

Ex. 5:  $5w + 22 - 2w = -5$

$$3w + 22 = -5$$

## Notes 1-4

Int 2

Multi-Step Equations w/Dist. Prop &amp; Like Terms

Unit 1

Ex. 6:  $8(t+2) - 3(t-4) - 6t = -34$

$$\cancel{8t} + 16 - \cancel{3t} + 12 - \cancel{6t} = -34$$

$$\begin{array}{r} -1t + 28 \\ -28 \\ \hline \end{array} = \begin{array}{r} -34 \\ -28 \\ \hline \end{array}$$

$$\begin{array}{r} -1t \\ -1 \\ \hline \end{array} = \begin{array}{r} -62 \\ -1 \\ \hline \end{array}$$

$$t = 62$$

Ex. 7: Is  $x = -4$  a solution for the following equation?

$$3x + 2 = 2x - 2$$

$$3(-4) + 2 = 2(-4) - 2$$

$$-12 + 2 = -8 - 2$$

$$-10 = -10$$

Yes