

Solve the following equations.

$$1) \quad 40 + 4x = -7(-4x + 8)$$

Steps

- a. Identify the two sides of your equation by drawing a line across the equal sign.
- b. Get rid of parentheses by distributing.
- c. Decide which side you want all your variables to be on.
- d. Add or subtract on both sides to move your variables to the side you picked in c.
- e. Add or subtract to move your constants to the other side.
- f. Solve for x .

$$2) \quad -15x + 21 + 5x = 41$$

- a. Identify the two sides of your equation.
- b. Combine only like-terms that are on the same side of the equal sign.
- c. This turns into a simple two-step equation.
- d. Solve for x .

$$3) \quad x + 21 = -2(-2 - 3x) - 3$$

- a. Identify the two sides of your equation.
- b. Get rid of parentheses by distributing.
- c. Combine only like-terms that are on the same side of the equal sign.
- d. Decide which side you want all your variables to be on.
- e. Move your variables to the side you picked in d.
- f. Move your constants to the other side.
- g. Solve for x .

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4) $5(4 - x) + 3x = 32 + 2x$

- a. Identify the two sides of your equation.
- b. Get rid of parentheses by distributing.
- c. Combine only like-terms that are on the same side of the equal sign.
- d. Decide which side you want all your variables to be on.
- e. Move your variables to the side you picked in d.
- f. Move your constants to the other side.
- g. Solve for x .

5) $-7x + 2(-x + 5) = 20 - 7x$

- a. Identify the two sides of your equation.
- b. Get rid of parentheses by distributing.
- c. Combine only like-terms that are on the same side of the equal sign.
- d. Decide which side you want all your variables to be on.
- e. Move your variables to the side you picked in d.
- f. Move your constants to the other side.
- g. Solve for x .

6) $-13 - 4x = 5(7 - 2x)$

- a. Identify the two sides of your equation.
- b. Get rid of parentheses by distributing.
- c. Decide which side you want all your variables to be on.
- d. Move your variables to the side you picked in c.
- e. Move your constants to the other side.
- f. Solve for x .

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Solve the following equations.

Steps

1) $40 + 4x = -7(-4x + 8)$

2) $-15x + 21 + 5x = 41$

3) $x + 21 = -2(-2 - 3x) - 3$

Name: _____ Date: _____ Period: _____

4) $5(4 - x) + 3x = 32 + 2x$

Steps

5) $-7x + 2(-x + 5) = 20 - 7x$

6) $-13 - 4x = 5(7 - 2x)$

Solve the following equations.

Steps

$$\begin{array}{rcl}
 1) & 40 + 4x & = -7(-4x + 8) \\
 & 40 + \cancel{4x} & = 28x - 56 \\
 & -4x & -4x \\
 & 40 & = 24x - 56 \\
 & +56 & +56 \\
 & \frac{96}{24} & = \frac{\cancel{24}x}{\cancel{24}} \\
 & 4 & = x
 \end{array}$$

- Identify the two sides of your equation by drawing a line across the equal sign.
- Get rid of parentheses by distributing.
- Decide which side you want all your variables to be on.
- Add or subtract on both sides to move your variables to the side you picked in c.
- Add or subtract to move your constants to the other side.
- Solve for x .

$$\begin{array}{rcl}
 2) & -15x + 21 + 5x & = 41 \\
 & \cancel{-10x} + \cancel{21} & = 41 \\
 & -21 & -21 \\
 & \cancel{-10x} & = \frac{20}{-10} \\
 & x & = -2
 \end{array}$$

- Identify the two sides of your equation.
- Combine only like-terms that are on the same side of the equal sign.
- This turns into a simple two-step equation.
- Solve for x .

$$\begin{array}{rcl}
 3) & x + 21 & = -2(-2 - 3x) - 3 \\
 & x + 21 & = 4 + 6x - 3 \\
 & \cancel{x} + 21 & = 6x + 1 \\
 & -x & -x \\
 & 21 & = 5x + 1 \\
 & -1 & -1 \\
 & \frac{20}{5} & = \frac{\cancel{5}x}{\cancel{5}} \\
 & 4 & = x
 \end{array}$$

- Identify the two sides of your equation.
- Get rid of parentheses by distributing.
- Combine only like-terms that are on the same side of the equal sign.
- Decide which side you want all your variables to be on.
- Move your variables to the side you picked in d.
- Move your constants to the other side.
- Solve for x .

$$\begin{aligned}
 4) \quad & 5(4 - x) + 3x = 32 + 2x \\
 & 20 - 5x + 3x = 32 + 2x \\
 & 20 - 2x = 32 + 2x \\
 & -2x = -2x \\
 & \cancel{20} - 4x = 32 \\
 & -20 = -20 \\
 & \frac{1x}{-4} = \frac{12}{-4} \\
 & x = -3
 \end{aligned}$$

- Identify the two sides of your equation.
- Get rid of parentheses by distributing.
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- Decide which side you want all your variables to be on.
- Move your variables to the side you picked in d.
- Move your constants to the other side.
- Solve for x .

$$\begin{aligned}
 5) \quad & -7x + 2(-x + 5) = 20 - 7x \\
 & -7x - 2x + 10 = 20 - 7x \\
 & -9x + 10 = 20 - 7x \\
 & +7x = +7x \\
 & -2x + 10 = 20 \\
 & -10 = -10 \\
 & \frac{12x}{-2} = \frac{10}{-2} \\
 & x = -5
 \end{aligned}$$

- Identify the two sides of your equation.
- Get rid of parentheses by distributing.
- Combine only like-terms that are on the same side of the equal sign.
- Decide which side you want all your variables to be on.
- Move your variables to the side you picked in d.
- Move your constants to the other side.
- Solve for x .

$$\begin{aligned}
 6) \quad & -13 - 4x = 5(7 - 2x) \\
 & -13 - 4x = 35 - 10x \\
 & +10x = +10x \\
 & -13 + 6x = 35 \\
 & +13 = +13 \\
 & \frac{1x}{6} = \frac{48}{6} \\
 & x = 8
 \end{aligned}$$

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- Move your variables to the side you picked in d.
- Move your constants to the other side.
- Solve for x .