

Solving Linear or First Degree Equations in One Variable

Basics Tools:

1. Distributive Property

Ex. $3(5-2) = (3 \cdot 5) - (3 \cdot 2)$
 $15 - 6 = 9$

Ex. $3(x-2) = 3x - 6$

2. Addition (and Subtraction) Property of Equality (opposite signs add to zero)

Ex. $6 + (-6) = 0$

$-5 + 5 = 0$

$-2x + 2x = 0$

$x + (-x) = 0$

3. Multiplication (and Division) Property of Equality (same signs to divide to +1)

Ex. $6 * \frac{1}{6} = 1$

$-\frac{2}{5} * -\frac{5}{2} = 1$

$\frac{1}{3} * \frac{3}{1} = 1$

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Basics Tools:

1. Distributive Property

EX!

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



$$\frac{-6x}{\textcircled{1}} - \frac{6}{\textcircled{2}} = -4x - 4$$

2. Addition (and Subtraction) Property of Equality (opposite signs add to zero)

Combine like terms.

combine x's

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$$\begin{array}{r} -6x - 6 = -4x - 4 \\ +6x \quad +6x \\ \hline \end{array}$$

$$\begin{array}{r} 0 - 6 = 2x - 4 \\ +4 \quad +4 \\ \hline \end{array}$$

combine numbers

$$-2 = 2x + 0$$

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$$-2 = 2x$$

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3. Multiplication (and Division) Property of Equality (same signs to divide to +1)

$$\left(\frac{1}{2}\right)(-2) = \left(\frac{1}{2}\right) \cdot \frac{2}{1} \cdot x$$

multiply both sides by the reciprocal of 2

$$-1 = 1x$$

$$\boxed{-1 = x}$$

answer