

One Step Equations

Solve an addition equation with
subtraction

$$\begin{array}{r} x + 3 = 7 \\ -3 \quad -3 \\ \hline x = 4 \end{array}$$

what is done to
one side the
equation (= sign)
must always be
done to the
other side!



One Step Equations

Solve a subtraction problem with
addition

$$\begin{array}{r} x - 8 = 5 \\ +8 \quad +8 \\ \hline x = 13 \end{array}$$

One Step Equations

Solve a division problem with multiplication

$$\begin{array}{r} \frac{x}{7} = 3 \\ \hline (7)\frac{x}{7} = 3(7) \\ \hline x = 21 \end{array}$$

$$1.) \quad (2)\frac{x}{2} = 10 \quad (2)$$

$$x = 20$$

$$2.) \quad \frac{5x}{5} = \frac{-25}{5}$$

$$x = -5$$

Two-Step Equations

$$3x + 7 = 34$$

Do the inverse (opposite) operation for

1.) Addition/Subtraction Expressions
(numerical term)

2.) Multiplication/Division Expressions
(variable term: Coefficient of x)

1.)	$3x + 7 = 34$	2.)	$3x = 27$
	$\quad -7 \quad -7$		$\quad 3 \quad 3$
	<hr/>		<hr/>
	$3x = 27$		$x = 9$

1.) $-5x + 13 = -17$

Start solving for x
by working on the side of the equal sign that contains the variable x.

	-13	-13	← step 1: (inverse of +13 is -13 from both sides)
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	$-5x = -30$		← step 2: (inverse of multiplying by -5 is dividing both sides by -5)
	-5	-5	
	<hr/>	<hr/>	
	$x = 6$		

2.) $3x + 2 = -7$

	-2	-2	← step 1
	<hr/>	<hr/>	
	$3x = -9$		← step 2
	3	3	
	<hr/>	<hr/>	
	$x = -3$		

$$7.) \quad 7 + \underline{x} = 3$$

$$\begin{array}{r} -7 \\ 4 \\ -7 \end{array}$$

Step 1: Inverse of adding 7....subtract 7 from both sides!

$$(4) \frac{x}{4} = -4(4)$$

Step 2: Inverse of dividing by 4.....multiply by 4!

$$x = -16$$

$$8.) \quad 15 = \underline{x} + 6$$

$$\begin{array}{r} -6 \\ 3 \\ -6 \end{array}$$

Step 1: Inverse of adding 6....subtract 6 from both sides!

$$(3) 9 = \frac{x}{3} (3)$$

Step 2: Inverse of dividing by 3.....multiply by 3!

$$27 = x$$