MasterMath

Algebra

SOLVING ONE- AND TWO-STEP EQUATIONS

Rules of the Game:

- **You can make any change to one side of the equation, as long as you make the same change to the other side.**
  - x = 16, so x + 4 = 16 + 4
- **Isolate the variable.**
  - Manipulate equations so variable is isolated:
    - x = something
- **Combine Like Terms.**
  - x + 3x + 5 + 2 → 4x + 7
- **Use the Inverse Operation (opposite) to move clutter away from the variable.**
  - x + 5 = 15 → x + 5 – 5 = 15 – 5 → x = 10
  - x ÷ 3 = 15 → x ÷ 3 * 3 = 15 * 3 → x = 45

Examples:

$x + 2 = 7$

$x + 2 - 2 = 7 - 2$

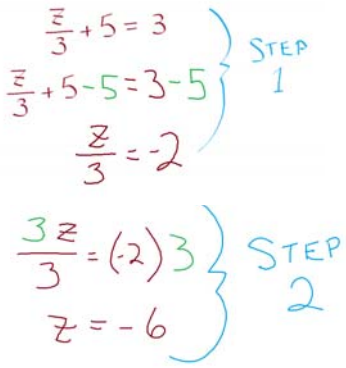
$x = 5$

$3z = 15$

$3z \div 3 = 15 \div 3$

$z = 5$

Examples:



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  - $x + 5 = 15 \rightarrow x + 5 - 5 = 15 - 5 \rightarrow x = 10$
  - $x \div 3 = 15 \rightarrow x \div 3 * 3 = 15 * 3 \rightarrow x = 45$

You try it!

3y + 9 = 30

Solving One- and Two-Step

You try it!

3y + 9 = 30

$$3y + 9 - 9 = 30 - 9$$
$$3y = 21$$
$$\frac{3y}{3} = \frac{21}{3}$$
$$y = 7$$

Solving One- and Two-Step

You try it!

Your cell phone bill was $48.00. Your cell phone company charges a monthly fee of $30.00 plus $.25 for each text message. How many text messages did you send?

Solving One- and Two-Step

You try it!

Your cell phone bill was $48.00. Your cell phone company charges a monthly fee of $30.00 plus $.25 for each text message. How many text messages did you send (T)?

$30 + .25T = 48$

$30 - 30 + .25T = 48 - 30$

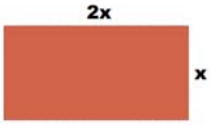
$.25T = 18$

$.25T \div .25 = 18 \div .25$

$T = 72$

Solving One- and Two-Step

You try it!



The perimeter of this rectangle is 36". Find x.

Solving One- and Two-Step

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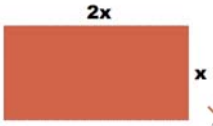

The perimeter of this rectangle is 36". Find x.

$x + 2x + x + 2x = 36''$

$6x = 36''$

$\frac{6x}{6} = \frac{36''}{6}$

$x = 6''$

Solving One- and Two-Step