

11/13/2014

Good Afternoon!

Take out your homework.
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2-3 Equations with Variables on Both Sides

Examples:

Solve each equation:

a. $7y = 12 + 4y$

$$\begin{array}{r} -7y \\ -12 \\ -12 \\ -12 \end{array} \quad \begin{array}{r} -4y \\ -4y \\ -4y \\ -4y \end{array} \quad \begin{array}{r} 12 \\ -12 \\ -12 \\ -12 \end{array} \quad \begin{array}{r} 4y \\ -4y \\ -4y \\ -4y \end{array}$$

$$0 = 12 - 3x$$

$$-12 = -3x$$

$$4 = x$$

b. $6x + 3 = 8x - 21$

$$\begin{array}{r} 3 \\ 24 \\ 12 \end{array} \quad \begin{array}{r} -8x \\ -8x \\ -8x \end{array} \quad \begin{array}{r} -21 \\ -21 \\ -21 \end{array}$$

$$3 = 2x - 21$$

$$24 = 2x$$

$$12 = x$$

both side

Step 1 sub. $7y$ b.s.

Step 2 sub 12 b.s.

Step 3 div by -3

Step 1 sub $6x$ b.s.

Step 2 add 21 b.s.

Step 3 div bs by 2

Check

$$7(4) = 12 + 4(4)$$

$$28 = 12 + 16$$

$$28 = 28 \quad \checkmark$$

$$6(12) + 3 = 8(12) - 21$$

$$72 + 3 = 96 - 21$$

$$75 = 75 \quad \checkmark$$

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Variables on Both Sides Word Problems**Examples:**

Translate to an algebraic equation and solve:

- a. Two less than six times a number is the same as thirteen more than a number. Find the number.

$$\begin{array}{rcl} 6x - 2 & = & 13 + x \\ 5x - 2 & = & 13 \\ 5x & = & 15 \\ x & = & 3 \end{array}$$

- b. Three less than four times a number is the same as three times a number increased by four. Find the number.

$$\begin{array}{rcl} 4x - 3 & = & 3x + 4 \\ x - 3 & = & 4 \\ x & = & 7 \end{array}$$

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2-5 Solving Multi-Step Equations

Examples:

Solve each equation:

a. $3(5x - 4) = 8x + 2$

$15x - 12 = 8x + 2$

$7x - 12 = 2$

$7x = 14$

$x = 2$

Step 1

distribute 3

Step 2

sub. $8x$ b.s.

add 12 b.s.

Step 3

div b.s. by 7

b. $2(9x - 1) = 99 - 7(3 - 4x)$

$18x - 2 = 99 - 21 + 28x$

$-2 = 78 + 10x$

$-80 = 10x$

$-8 = x$

Step 1

distribute

Step 2

sub $18x$ b.s.

Step 3

comb. like terms

div b.s. by 10

Step 4

Check