

Math 7H - Unit 2b

Day 11 - Solving Multi-Step Equations

Lesson Objectives:

- I can solve multi-step equations by simplifying each side of the equation.
- I know how to show work when solving equations.

Steps for Solving Equations

Step #0 Simplify each side of the equation

- 0a Distributive Property
- 0b Combine Like Terms
- 0c *Coming Next Year*

Step #1 Get rid of the constant

Step #2 Get rid of the coefficient

$$32 - 18 = 2(2x + 9)$$

$$\begin{array}{r} 14 = 4x + 18 \\ -18 \quad -18 \\ \hline -4 = 4x \\ \div 4 \quad \div 4 \\ \hline -1 = x \end{array}$$

Distributive Prop. (=)
Subtraction Prop. (-)
Subtraction Prop. (-)
Division Prop. (÷)

$$9 = 6(x + 2)$$

$$\begin{array}{r} 9 = 6x + 12 \\ -12 \quad -12 \\ \hline -3 = 6x \\ \div 6 \quad \div 6 \\ \hline -\frac{1}{2} = x \end{array}$$

Distributive Prop. (=)
Subtraction Prop. (-)
Subtraction Prop. (-)
Division Prop. (÷)

$$\begin{array}{r} 10y - (4y + 8) = -20 \\ 10y - 4y - 8 = -20 \\ 6y - 8 = -20 \\ +8 \quad +8 \\ \hline 6y = -12 \\ \div 6 \quad \div 6 \\ \hline y = -2 \end{array}$$

Distributive Prop. (=)
Subtraction Prop. (-)
Subtraction Prop. (-)
Division Prop. (÷)

$$5(1 - 2w) + 8w = 15$$

$$\begin{array}{r} 5 - 10w + 8w = 15 \\ 5 - 2w = 15 \\ -5 \quad -5 \\ \hline -2w = 10 \\ \div -2 \quad \div -2 \\ \hline w = -5 \end{array}$$

Distributive Prop. (=)
Subtraction Prop. (-)
Subtraction Prop. (-)
Division Prop. (÷)

$$\begin{array}{r} 3(a - 3) - 2(a + 3) = 2 \\ 3a - 9 - 2a - 6 = 2 \\ a - 15 = 2 \\ +15 \quad +15 \\ \hline a = 17 \end{array}$$

Distributive Prop. (=)
Subtraction Prop. (-)
Subtraction Prop. (-)
Addition Prop. (+)

$$12 - 9 = 2(n + 2) - 3n - 5n$$

$$\begin{array}{r} 3 = 2n + 4 - 3n - 5n \\ 3 = -6n + 4 \\ -4 \quad -4 \\ \hline -1 = -6n \\ \div -6 \quad \div -6 \\ \hline \frac{1}{6} = n \end{array}$$

Distributive Prop. (=)
Subtraction Prop. (-)
Subtraction Prop. (-)
Division Prop. (÷)

Homework

Multi-Step Equations WKS

* Individual Think Time *



What to do if you get stuck...

- Reread the problem. Did you write it down correctly?
- Reread your notes. Is there a problem similar that we did together in class?
- Find a problem similar in your book. Try this one to see if it helps.
- Skip the problem until the end of Individual Think Time. Then ask an "educated" question of a neighbor or Mrs. Call.

Today we're working by...

