

Lesson 3.1 Solving Linear Equations with one Variable (Day 6)

Math Warm Up

Monday	My Thinking	Correct/Compare
$\frac{2x-1}{3} + \frac{x+4}{4} = \frac{3}{2}$		

Lesson 3.1 Solving Linear Equations with one Variable (Day 5c)

Math Warm Up

Monday	My Thinking	Correct/Compare
$\frac{2x-1}{3} + \frac{x+4}{4} = \frac{3}{2}$		$x = \frac{10}{11}$

Lesson 3.1 Solving Linear Equations with one Variable (Day 5)

Objective

TSW solve linear equations with one variable by simplifying expressions using **distributive property**, **laws of equality**, **combining like terms** and **moving all the variables to one side of the equal sign**.



▶ Linear equations can be used to solve mathematical and real-world problems. A linear equation with one variable can have one solution, no solution, or infinitely many solutions.

Common Core State Standards *8.EE.7 Solve linear equations with one variable*

8EE 7 Solve linear equations in one variable.

8EE 7a Give examples of linear equations in one variable with one solution, infinity many solutions, or no solutions

8EE 7b Solve linear equations with rational number coefficients

- **Mathematical Practices** *1 Solve problems/persevere 2 Reason 4 Model Mathematics 7 Look for and use structure*

Guided Practice 1

$$8 - 3(x + 2) = 2(4 - 3x) - 4.5$$

*Move variable to ONE side of the equal sign

-most often you will add or subtract the variables

*Use distributive property

- multiply whatever is on the outside of the parenthesis with the inside of the parenthesis
- negative times negative = positive

*Combine like terms

- all the variable together
- all numbers together

*Use laws of equality

-use the inverse operation to add, subtract, multiply, and divide on both sides of the equal sign

Guided Practice 1

$$8 - 3(x + 2) = 2(4 - 3x) - 4.5$$

$$8 - 3x - 6 = 8 - 6x - 4.5$$

$$2 - 3x = 3.5 - 6x$$

$$2 - 3x + 6x = 3.5 - 6x + 6x$$

$$2 + 3x = 3.5$$

$$2 + 3x - 2 = 3.5 - 2$$

$$3x = 1.5$$

$$\frac{3x}{3} = \frac{1.5}{3}$$

$$x = 0.5$$

*Move variable to ONE side of the equal sign

-most often you will add or subtract the variables

*Use distributive property

- multiply whatever is on the outside of the parenthesis with the inside of the parenthesis

- negative times negative = positive

*Combine like terms

- all the variable together

- all numbers together

*Use laws of equality

-use the inverse operation to add, subtract, multiply, and divide on both sides of the equal sign

We Do:

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

*Move variable to ONE side of the equal sign

-most often you will add or subtract the variables

*Use distributive property

- multiply whatever is on the outside of the parenthesis with the inside of the parenthesis
- negative times negative = positive

*Combine like terms

- all the variable together
- all numbers together

*Use laws of equality

-use the inverse operation to add, subtract, multiply, and divide on both sides of the equal sign

We Do:

$$\begin{aligned}2x + 3(x - 4) &= 4(2x + 3) \\2x + 3x - 12 &= 8x + 12 \\5x - 12 - 8x &= 8x + 12 - 8x \\-3x - 12 &= 12 \\-3x - 12 + 12 &= 12 + 12 \\-3x &= 24 \\\frac{-3x}{-3} &= \frac{24}{-3} \\x &= -8\end{aligned}$$

*Move variable to ONE side of the equal sign

-most often you will add or subtract the variables

*Use distributive property

- multiply whatever is on the outside of the parenthesis with the inside of the parenthesis
- negative times negative = positive

*Combine like terms

- all the variable together
- all numbers together

*Use laws of equality

-use the inverse operation to add, subtract, multiply, and divide on both sides of the equal sign

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Independent Practice #1-3

Name: _____ Independent Practice #1-3

Practice 3.1

1 $3x - 0.4(5 - 2x) = 5.6$

2 $\frac{5(x + 2)}{3} - \frac{x - 1}{3} = 1$

Course 3

Challenge- Solve created equation/
"Pick a pumpkin"



-Create Word-toons



Lesson Check —#3 Solve linear equation with one variable