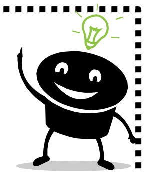
Name ____

LEARNING OUTCOMES



I can solve easily factored equations.

Lesson 17: Equations Involving Factored Equations

Warm Ups: Solve each equation for x

1. $x - 10 = 0$	2. $\frac{x}{2} + 20 = 0$
Find two solutions to the following equation: $(x-10)\left(\frac{x}{2}+20\right)=0$	Challenge: Find **FIVE** solutions to the following equation: $(x-10)(2x+6)(x^2-36)\left(\frac{x}{2}+20\right)=0$

We do

The product of two numbers is 20. What are the possibilities for the two numbers?
If the product of two numbers is zero, what must be true about the two numbers?
How can we phrase this mathematically? This is known as the **zero-product property**. What if the product of three numbers is zero? What if the product of seven numbers is zero?

We do

Consider the equation $2x^2 - 10x = 0$.

Find the greatest common factor of both terms on the left side, and apply reverse distribution (factoring) to rewrite the equation.	
Rewrite the new equation as a compound statement. Find the two solutions to the equation.	

YOU DO

Exercises

Consider the equation $(x-4)(x+3)=0$.

Rewrite the equation as a compound statement. Find the two solutions to the equation.	

YOU DO

Solve for x in the following equations:

1. $(x+1)(x+2)=0$	2. $(3x-2)((x+12)=0$
3. $(x+4)(x-6)(x-10)=0$	4. $x^2-6x=0$

Name ______________________________________ Homework

1. Rewrite each equation as a compound statement, and then find the solution set of each equation:
   a. $(x - 16.5)(x - 109)$=0

   b. $(x - 1)(x - 2)(x - 3) = 0$

2. Solve $x^2 - 11x = 0$ for ***x***.

3. Using what you've learned in this lesson, create an equation that has 53 and 22 as its only solutions.

Name ____

Lesson 17: Exit Ticket

1. Find the solution set to the equation $3x^2 + 27x = 0$.

2. Determine if each statement is true or false. If the statement is false, explain why or show work proving that it is false.

   a. If $a = 5$, then $ac = 5c$.

   b. If $ac = 5c$, then $a = 5$.