Name: _____ Date: _____ Period: _____

Unit 1 Day 3 – Solving Two-Step Equations Classwork

Solving equations has been part of your math experience for a long time. You may have even learned some shortcuts. Today you are going to look at the reasons behind the steps when solving equations.

Given the following problems, give a reason IN YOUR OWN WORDS for each step.

1) 2x – 3 = 7

a. 2x – 3 + 3 = 7 + 3 _____

b. 2x = 10 _____

c. x = 5 _____

2) Summarize the rules to follow that allow us to solve equations: _____

_____

_____

How do you know what to do first? _____

_____

Tyler solved four equations, but unfortunately he did <u>three</u> of them wrong. Find the mistakes in his work, THEN SOLVE THE PROBLEM CORRECTLY. Identify the equation he did correctly.

3) $-6 = \frac{x}{2}$

$-6 \div 2 = -3$

$x = -3$

4) m – 94 = 100

-94 -94

m = 6

5) 25 – w = 40

-25 -25

- w = 15

-1 -1

w = -15

6) 16 = -4(k – 3)

16 = -4k – 12

+12 = +12

28 = -4k

28 ÷ -4 = -7 so k = -7

How do you know if you have solved the equation correctly? Put your value back in and simplify the expression.

7. Matthew solved this equation: 8x – 3 = 1 and found that x = 2.
Check to see if he is correct by simplifying 8(2) – 3 = 1.

Solve these equations, then check each solution to make sure it is correct.

8) 8 = 4m **9)** $8 = \frac{m}{4}$ **10)** $8 = \frac{4}{m}$ **11)** 8 = 4 - m

The distributive property is a way to use multiplication to simplify expressions. 8(x – 9) = 8x – 72
When distributing a negative number, don't forget to multiply both terms by the negative!

12) Solve for k: 9(k + 2) = 45 **13) Solve for y:** -36 = -6(2y – 4)

14) Give a reason IN YOUR OWN WORDS for each step, and explain what the solution means.

8x – 7 = 3x – 7 + 5x

a. 8x – 7 = 3x + 5x – 7 _____

b. 8x – 7 = 8x – 7 _____

c. 8x – 8x – 7 = 8x – 8x – 7 _____

d. -7 = -7 _____

15) Give a reason IN YOUR OWN WORDS for each step, and explain what the solution means.

6w + 15 = 2w – 7 + 4w

a. 6w + 15 = 2w + 4w – 7 _____

b. 6w + 15 = 6w – 7 _____

c. 6w – 6w + 15 = 6w – 6w – 7 _____

d. 15 = -7 _____