Lesson 1.4/1.5: Solving, Rewriting and Writing Equations & Formulas

<u>Solving Equations Examples</u>:

Solve the following equations.

1. $\frac{3}{x} = 6$

3. $5(x - 4) = 5x + 12$

2. $\frac{1}{3}x + \frac{1}{4} = x - \frac{1}{6}$

4. $5(2 - x) = 10 - 5x$

** Equations can contain more than one variable.

<u>Rewriting Equations and Formulas Examples</u>:

1. Solve for y $7x - 3y = 8$

2. Solve for x $xy - y = 10$

What if we solve for y?

3. Use the Fahrenheit conversion formula, solve for C.

$$F = \frac{9}{5}C + 32$$

Problem Solving with Algebraic Models Examples:

Problem Solving Strategies:

- Draw a diagram
- Look for patterns

- Identify key words
- Guess and check

Verbal model: an equation in words

Algebraic model: conversion of the verbal model to variables, numbers, and symbols

1. You went shopping for batteries. Your bill was $14.39. How many 9-volt batteries did you purchase at $2.39 each if AA batteries cost $1.61 each and you purchased 3 of them?

2. You drove 280 miles using 15 gallons of gas that cost $2.68 per gallon. If you get 24 mi/gal on the highway and 16 mpg in the city, how much did you spend on city driving? Highway?