Lesson 1.3 Warm Up (Clickers)

1. Which property is being illustrated below?

(3 + f) + 9 = 3 + (f + 9)

2. What number system does the following belong to (name all that apply--rational, irrational, whole, natural, integer)?

a. 1.345 b. -3 c. √9

3. Solve the equation:

3x - 9 = 12x + 4

Lesson 1.3 Algebraic Expressions

<u>Essential Understanding</u>: You can represent some mathematical phrases and real-world quantities using algebraic expressions.

Ex. Which algebraic expression models the word phrase seven fewer than a number t?

a. t + 7 b. -7t c. t - 7 d. 7 - t

1 Which algebraic expression models the word phrase two times the sum of a and b?

A a + b

- B 2(a + b)
- C 2a + b
- D a + 2b

Ex. You start with \$20 and save \$6 each week. Write an algebraic expression that models the total amount you save.

2 You had \$150, but you are spending \$2 each day. What algebraic expression models this situation?

To <u>evaluate</u> an algebraic expression, substitute a number for each variable in the expression. Then simplify using the order of operations.

Ex. Evaluate 7(a + 4) + 3b - 8 for a = -4 and b= 5

3 Evaluate for x = 1 and y = 2 (put your answer in as a decimal)

$$\frac{x}{2} + y^2$$

An expression that is a number, a variable, or the product of a number and one or more variables is a <u>term</u>. A <u>coefficient</u> is the numerical factor of a term. A <u>constant term</u> is a term with no variables.

<u>Like terms</u> have the same variables raised to the same powers. You can simplify an algebraic expression that has like terms.



Ex. Simplify

a. $7x^2 + 3y^2 + 2y^2 - 4x^2$

b. -(3k + m) + 2(k - 4m)

5 Simplify: $5x^2 - 6x + 9x^2 - 3 + 4x$ 4 Simplify: (8a + 3b) + 10(2a - 5b)

6 Write an algebraic expression that models: the product of 8 and the sum of a number x and 3.

- 7 Write an algebraic expression that models: The piggy bank contained \$25 and \$1.50 is added each day.
- 8 Simplify by combining like terms: 7b (3a 8b)