October 17, 2013

Algebra 3-1: Models and Properties of Addition

Warm-Up

Answer the following questions. Use past notes or your book if you need to.

1. Give an example of the commutative property of multiplication. $2 \cdot 4 = 4 \cdot 2$

2. Give an example of the associative property of multiplication. $(7 \cdot 4) \cdot 3 = 7 \cdot (4 \cdot 3)$

Commutative Property of Addition

When adding it is legal to change the order.

Example: $2 + 4 = 4 + 2$

Associative Property of Addition

When adding it is legal to regroup and deals with ( ).

Example: $(7 + 4) + 3 = 7 + (4 + 3)$

Adding Negative Numbers

Adding –x is the same as Subtracting x.

Example: 8 + (-2) is the same as 8 − 2.

Example Problems

1. Simplify mentally. Write the order in which you simplified.

198 + 47 + 2 — 247

200 + 47 =

2. Below are steps to simplify (26 + y) + -6. Write down the property shown in each step.

(26 + y) + -6	Given
-6 + (26 + y)	Commutative
(-6 + 26) + y	Associative
20 + y	Simplify

3. Without a calculator, simplify (-5 + x) + -10 $-15+x$

$(-5+-10)+x$

$-15+x$

4. During a drought, the level of the creek dropped 18 inches. After a storm, it rose 2 inches. Later, the level dropped 4 inches.

+2 -4 -18

a) Write an **equation** that represents the net change, C.

$C = -18+2+-4 = -20$

$C = 20$ inch drop

-4

b) Use a number line to check your answer.