Notes on Integer Computation and Concepts

Definitions:

Integer: positive and negative whole numbers, including zero EX: 5, -12, 0 (not fractions or decimals)

Opposites: numbers located equal distance from zero (-x) Ex: 3 and -3

Absolute Value: the distance a number is from zero |x| Ex: |7| = 7 |-7| = 7

Comparing Integers- the number farther to the left on the horizontal number line is the smaller number

(GettyImages: horizontal number line with integers)

Adding Integers –

• Look at the type of numbers you are to add (positive or negative)
• If the signs are the same (both positive or both negative) add the absolute value of the numbers
• If the signs are different subtract the absolute values of the numbers
• The answer's sign (+ or -) is determined by the number with the largest absolute value

Ex: -6 + (-5) = -11 8 + (-6) = 2 -7 + 4 = -3 5 + (-9) = -4 -14 + 16 = 2

Subtraction Integers –

• Change subtraction to “adding the opposite”
• Follow rules for addition (see above)

Ex: -5 -6 = -5 + (-6) = -11 -7 - (-5) = -7 + 5 = -2 5 - (-9) = 5 + 9 = 14 7 - 12 = 7 + (-12) = -5

Multiplying or Dividing Integers-

• Multiply or divide the numbers as indicated
• The answer is positive the numbers have the same sign (both positive or both negative)
• The answer is negative if one of the two numbers is negative (negative × positive or positive × negative)

Ex: -6 × 7 = -42 -8 × -6 = 48 9 × -6 = -54 56 ÷ -7 = -8 -72 ÷ -8 = 9 -63 ÷ 7 = -9

That is as complicated (easy) as it can get.

These rules work for computations involving negative fractions and decimals also!!!

Questions to ponder: What would you do if you had multiple numbers to add or multiply? Are there better ways to solve than do one problem at a time?

-6 + (-8) + 9 + (-5) + 12 = ? 5 × (-3) × 2 × (-4) × (-1) = ?