

Order of Operations, Absolute Value and Signed Numbers Review**Order of Operations - Must follow PEMDAS**

P - parentheses (grouping symbols) $[\]$, $| |$, fraction bar

E - exponents 3^2 is $3 \cdot 3 = 9$

[M - multiply
D - divide] > whichever comes first L to R

[A - Add
S - subtract] > whichever comes first L to R

Absolute Value - the distance a number is from zero on a number line

★ always POSITIVE

$$|3| = 3 \quad |-5| = 5 \quad |12 - 6| = |6| = 6$$

Signed Numbers

Remember! When you add a positive and negative number together, you are really subtracting the digits and your answer will take the same sign as the number with the larger absolute value

$$-5 + 2 = -3$$

$$-2 + 5 = 3$$

$$-8 + (-10) = -18$$

$$4 - 6 = -2$$

★ (-) has many meanings!

subtract
negative
"the opposite of"

When you multiply a positive and a negative number together the answer is always Negative

When you multiply two numbers with the SAME SIGN, the answer is always positive

EX 1

$$2^3 - 4 \cdot 5 + 6(4-2)$$

$$2^3 - 4 \cdot 5 + 6(2)$$

$$8 - 4 \cdot 5 + 6(2)$$

$$8 - 20 + 6(2)$$

$$8 - 20 + 12$$

$$8 - 20 + 12$$

$$-12 + 12 = 0$$

EX 2

$$2[4(5-8) + 6 - 4^2]$$

$$2[4(-3) + 6 - 4^2]$$

$$2[4(-3) + 6 - 16]$$

$$2[-12 + 6 - 16]$$

$$2[-6 - 16]$$

$$2(-22) = -44$$

EX 3

$$8 - 3(4-2)^2 + |-14|$$

$$8 - 3(2)^2 + |-14|$$

$$8 - 3(2)^2 + 14$$

$$8 - 3(4) + 14$$

$$8 - 12 + 14$$

$$-4 + 14 = 10$$