PROPERTIES:

Equivalent expressions: The things on one side equal the things on the other side.

Key Points:

Commutative Property - You change the ORDER of the #s.

3 + 4 = 4 + 3

5 * 6 = 6 * 5

** **Only applies to addition and multiplication.**

Associative Property - You change the PARENTHESES.

(2 + 3) + 4 = 2 + (3 + 4)

(5 * 6) * 7 = 5 * (6 * 7)

** **Only applies to addition and multiplication.**

Inverse Properties - the solution gets smaller.

Inverse Property of Addition (make it zero): 6 + inverse = 0

Inverse Property of Multiplication (make it = 1):
5 * inverse = 1

$5 \times \frac{1}{5}$

Identity Properties - the solution stays the same:

Identity Property of Addition (add zero): 6 + zero = 6

Identity Property of Multiplication (multiply by 1):
5 * one = 5

Zero Property of Multiplication: The product of anything multiplied by 0 = 0

5 * 0 = 0

Multiplication Property of -1: The product of anything multiplied by -1 will change the sign.

5 * -1 = -5 -4 * -1 = 4

Distributive property

$4(3+7)$ $4(x+7)$

$12+28$ $4x+28$

$=40$

ABSOLUTE VALUE: The number will always be positive.
It acts like parentheses in order of operations.

$|3| = 3 \quad |-3| = 3$

$|4-6| + |4| - |-13|$

$|-2| + 4 - 13$

$2 + 4 - 13 = -7$