CLASS NOTES: Number Properties

Commutative Property

Changing the order of addends or factors does not change the sum or product.

How I will remember this:

Rule:	**Rule:**
$a + b = c$ $b + a = c$	$a \bullet b = c$ $b \bullet a = c$
Example:	**Example:**
$3 + 6 = 9$ $6 + 3 = 9$	$5 \bullet 4 = 20$ $4 \bullet 5 = 20$
OR $3 + 6 = 6 + 3$	OR $5 \bullet 4 = 4 \bullet 5$

Associative Property

The order in which numbers are grouped does not affect the sum or product.

How I will remember this:

Rule:	**Rule:**
$(a + b) + c = d$ $a + (b + c) = d$	$(a \bullet b) \bullet c = d$ $a \bullet (b \bullet c) = d$
Example:	**Example:**
$(5 + 6) + 7 = 18$ $5 + (6 + 7) = 18$	$(3 \bullet 4) \bullet 5 = 60$ $3 \bullet (4 \bullet 5) = 60$
OR $(5 + 6) + 7 = 5 + (6 + 7)$	OR $(3 \bullet 4) \bullet 5 = 3 \bullet (4 \bullet 5)$

Distributive Property

Adding two or more numbers together, then multiplying the sum by a factor IS EQUAL TO multiplying each number alone by the factor first, and then adding the products.

How I will remember this:

Rule:

$$a\,(b + c) = (a \bullet b) + (a \bullet c)$$

Example:

$$4\,(6 + 8) = (4 \bullet 6) + (4 \bullet 8)$$

Identity Property

How I will remember this:

The ***additive*** identity is <u>ZERO</u>. If you add zero to any addend, the sum will equal that addend.	The ***multiplicative*** identity is <u>ONE</u>. If you multiply any factor by one, the product will equal that factor.
Additive Identity Rule: $a + 0 = a$ **Example:** $9 + 0 = 9$	**Multiplicative Identity Rule:** $a \bullet 1 = a$ **Example:** $9 \bullet 1 = 9$