

Mahony P2 Lab

Property	Examples
<p><u>Additive Identity</u></p> <p>For <u>ANY</u> number, if you <u>add zero</u> it stays the same.</p>	$18 + 0 = 18$ $0 + m = m$ $17 + 3m + 0 = 17 + 3m$ <p>ADD zero</p>
<p><u>Multiplicative Identity</u></p> <p>For <u>ANY</u> number multiplied by <u>1</u> it stays the same.</p>	$5 \cdot 1 = 5$ $6 \cdot 1 = 6$ $1 \cdot x = x$ $7 \cdot 3m \cdot 1 = 7 \cdot 3m$ $1(x + 3) = x + 3$ <p>MULT by 1</p>
<p><u>Additive Inverse</u></p> <p>A number and its opposite add to <u>zero!</u></p>	$3 + (-3) = 0$ $27 + 31 - 31 = 27$ $17 + (-17) = 0$ $23x + -23x = 0$ $-m + m = 0$ <p>opposites</p>
<p><u>Multiplicative Inverse</u></p> <p>If you multiply by the <u>reciprocal</u> you get 1. (flipped #)</p>	$2 \cdot \frac{1}{2} = 1$ $\frac{1}{2} \cdot 2x = 4 \frac{1}{2}$ $1x = 2$ <p>Flipped numbers</p>
<p><u>Commutative Property</u></p> <p>The order you add or multiply doesn't matter!</p> <p>ORDER CHANGES</p>	$\underline{+4} \underline{-3} \underline{+5} = 5 + 4 - 3$ $= -3 + 4 + 5$ $4 \cdot 2 \cdot 6 = 2 \cdot 6 \cdot 4$
<p><u>Associative Property</u></p> <p>The way you group () 3 or more numbers when mult or adding doesn't matter!</p>	$(2 + 3) + (5 + 7) = 2 + (3 + 5) + 7$ <p>Parentnesis Change</p> <p><i>not distributive</i></p>
<p><u>Substitution Property</u></p> <p>A quantity can be <u>replaced</u> by its equal anywhere!</p>	<p>If $x = 5$ then 5 can replace x EX: $2x + 1$ $2(5) + 1$ $10 + 1$</p> <p>OR if $2 + 5 = 7$ put 7 when you see 2 + 5</p>

$$x + \underline{2 + 5} = x + \underline{7}$$

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<u>Distributive Property</u> "Mailman" Multiplication ACROSS Addition Deliver	$\underline{4} \cdot (\underline{3} + \underline{5}) = \underline{4}(\underline{3}) + \underline{4}(\underline{5})$ $4(3) + 4(5)$ $3(x+2) = 3(x) + 3(2)$
<u>Reflexive Property</u> Any number is equal to itself.	$3(x+2) = 3 \cdot x + 3 \cdot 2$ $5 = 5$ $x = x$ $2y + 7 = 2y + 7$ <p>nothing changes mahony = mahony</p>
<u>Symmetric Property</u> For any numbers a and b if $a = b$ then $b = a$	$60 = 30 + 30 \text{ then}$ $30 + 30 = 60$ $\text{if } 5 = x \text{ then } x = 5$

"The side of the equal sign doesn't matter!"

Zero product property

Any number
 multiplied by zero is zero

$$5x \cdot 0 = 0$$

$$0 \cdot 10 = 0$$

$$0 \cdot (-17) = 0$$

$$0(x+5) = 0$$