Mathematics Properties

a = a	If something is equal to its identical twin	**Reflexive Property**
a = b & b = a	If something flipped sides of the equal sign	**Symmetric Property**
a = b, c = b so a = c	If two items are equal to a third item, the two are equal	**Transitive Property**
a+b = b+a	If you reversed the order of addition or multiplication	**Commutative Property**
a+(b+c) = (a+b)+c	If you changed a grouping rearranged parenthesis, but kept everything else in the same order	**Associative Property**
If a=b then a+c = b+c	If you added the same non-zero # to both sides	**Addition Property**
If a = b ac = bc	If you multiplied the same nonzero # to both sides you have used the	**Multiplication Property**
a + 0 = a	If you added 0 to get the same # back	**Additive Identity**
(a) 1 = a	If you multiplied by 1 to get the same # back	**Multiplicative Identity**
a + (-a) = 0	If you added opposite #'s and ended with 0	**Property of Opposites**
$(b)^1/_b=1$	If you multiplied by a reciprocal to get 1	**Property of Reciprocals**
a(b+c) = ab+ac qr+rs = (q+s)r	If you multiplied a # into or pulled a # out of parenthesis	**Distributive Property**
(a)0 = 0	If you multiplied by 0 and got 0	**Multiplication Property of 0**
W(-1) = -w	If you multiplied by (-1) and got the opposite of what you started with	**Multiplicative Property of (-1)**
	If you have stated that a<b, a=b or a>b	**Comparison Property**
a < b, c is +, then ac < bc	If you multiplied an inequality by a positive # and maintained the inequality	**1st Multiplication Property of Order**
a < b, c is –, then ac > bc	If you multiplied as inequality by a negative # and reversed the inequality	**2nd Multiplication Property of Order**
a+c = b+c then a = b	If you cancelled the same quantity from both sides of an equation (by subtracting)	**Cancellation Property of Addition**
ac = bc so a = b	If you cancelled the same nonzero quantity from both sides of an equation (by division)	**Cancellation Property of Multiplication**
ab = 0 if a = 0 or b = 0	If a product is zero, so you know that one of the factors has to be zero	**Zero Product Property**
$^a/_b = (a)^1/_b$	If you changed a division to multiplication by a reciprocal	**Definition of Division**
a + (-b) = a - b	If you have switched from adding a negative to just subtraction, or vice versa	**Definition of Subtraction**
(x) $x = x^2$	If you have either broken apart exponents or created an exponent by multiplying a number by itself	**Definition of Exponents**
	If you have replaced one statement with an equivalent one and no other property or definition works	**Substitution Property**