

For all real numbers a , b , and c ...		Example
Reflexive Property	If a , then $a = a$	If z , then $z = z$
Symmetric Property	If $a = b$ then $b = a$	If $m^2 = 9$ then $9 = m^2$
Transitive Property	If $a = b$ and $b = c$ then $a = c$	If $y = 12$ and $12 = n$, then $y = n$
Addition Property	If $a = b$ then $a + c = b + c$	If $10k - 2 = 16$ then $10k = 18$
Subtraction Property	If $a = b$ then $a - c = b - c$	If $13h + 20 = 30$ then $13h = 10$
Multiplication Property	If $a = b$ then $a \times c = b \times c$	If $\frac{b}{3} = 6$ then $b = 18$
Division Property	If $a = b$ then $a \div c = b \div c$	If $12Q = 36$ then $Q = 3$
Substitution Property	If $a = b$ then you may replace a with b in any expression	If $5d + 7c = 28$ and $d = 2$ then $5(2) + 7c = 28$
Distributive Property	$a(b + c) = ab + ac$ $a(b - c) = ab - ac$	If $-3(y - 11) = 21$ then $-3y + 33 = 21$
Commutative Property	$a + b = b + a$ $a \times b = b \times a$	If $7 - p = -14$ then $-p + 7 = -14$ If $4^3(5) = 40$, then $5t^3 = 40$
Associative Property	$(a + b) + c = a + (b + c)$ $(a \times b) \times c = a \times (b \times c)$	If $38 = (19 \cdot 4) \cdot \frac{1}{2}$ then $38 = 19 \cdot (4 \cdot \frac{1}{2})$ If $94 + (6 + 87) = 187$, then $(94 + 6) + 87 = 187$
Multiplicative Prop. of Zero	$a \times 0 = 0$	$0(x - 73) = 0$
Additive Identity	$a + 0 = a$	$3R + 0 = 3R$
Multiplicative Identity	$a \times 1 = a$	$1(4G) = 4G$