

Properties of Real Numbers

Let \underline{a} , \underline{b} , and \underline{c} be real numbers, variables, or algebraic expressions.

	Property	Example
1.	Commutative Property of Addition $a + b = b + a$	$2 + 3 = 3 + 2$
2.	Commutative Property of Multiplication $a * b = b * a$	$2 * (3) = 3 * (2)$
3.	Associative property of Addition $a + (b + c) = (a + b) + c$	$2 + (3 + 4) = (2 + 3) + 4$
4.	Associative Property of Multiplication $a * (b * c) = (a * b) * c$	$2 * (3 * 4) = (2 * 3) * 4$
5.	Distributive Property $a * (b + c) = a * b + a * c$	$2 * (3 + 4) = 2 * 3 + 2 * 4$
6.	Additive Identity Property $a + 0 = a$	$3 + 0 = 3$
7.	Multiplicative Identity Property $a * 1 = a$	$3 * 1 = 3$
8.	Additive Inverse Property $a + (-a) = 0$	$3 + (-3) = 0$
9.	Multiplicative Inverse Property $a * (\frac{1}{a}) = 1$ Note: a cannot equal 0	$3(\frac{1}{3}) = 1$