

Name _____

Period _____

Math Properties

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

Definitions for Properties of Mathematics

Associative Property of Addition

When three or more numbers are added, the sum is the same regardless of the grouping of the addends. For example $(a + b) + c = a + (b + c)$

Associative Property of Multiplication

When three or more numbers are multiplied, the product is the same regardless of the order of the multiplicands. For example $(a \times b) \times c = a \times (b \times c)$

Commutative Property of Addition

When two numbers are added, the sum is the same regardless of the order of the addends. For example $a + b = b + a$

Commutative Property of Multiplication

When two numbers are multiplied together, the product is the same regardless of the order of the multiplicands. For example $a \times b = b \times a$

Distributive Property

The sum of two numbers times a third number is equal to the sum of each addend times the third number. For example $a \times (b + c) = a \times b + a \times c$

Identity Property of Addition

The sum of any number and zero is the original number. For example $a + 0 = a$.

Identity Property of Multiplication

The product of any number and one is that number. For example $a \times 1 = a$.

Additive Inverse of a Number

The additive inverse of a number, a is $-a$ so that $a + -a = 0$.

Multiplicative Inverse of a Number

The multiplicative inverse of a number, a is $\frac{1}{a}$ so that $a \times \frac{1}{a} = 1$.

