Properties

Name of Property	Definition	Example
Distributive Property	To multiply a sum by a number, multiply each addend of the sum by the number outside the parentheses.	$a(b+c)=a(b)+a(c)$ $3(4+6)=3(4)+3(6)$
Commutative Property	The order in which two numbers are added or multiplied does not change their sum or product.	$a+b=b+a$ $3+4=4+3$ --- $a\times b=b\times a$ $2\times 5=5\times 2$
Associative Property	The way in which three numbers are grouped when they are added or multiplied does not change their sum or product.	$(a+b)+c=a+(b+c)$ $(6+2)+7=6+(2+7)$ --- $(a\times b)\times c=a\times(b\times c)$ $(2\times 5)\times 3=2\times(5\times 3)$
Identity Property	The sum of an addend and 0 is the addend. The product of a factor and 1 is the factor.	$a+0=a$ $2+0=2$ --- $a\times 1=a$ $5\times 1=5$