PROPERTIES OF REAL NUMBERS

Commutative Properties

Addition:	$a + b = b + a$	$(11 + r) + 8 = (r + 11) + 8$
Multiplication:	$a \cdot b = b \cdot a$	$3 \cdot 5 = 5 \cdot 3$

What you need to remember: The order numbers are added or multiplied will not change the result.

Associative Properties

Addition:	$(a + b) + c = a + (b + c)$	$2 + (x + 5) = (2 + x) + 5$
Multiplication:	$(a \cdot b) \cdot c = a \cdot (b \cdot c)$	$(4 \cdot y) \cdot 5 = 4 \cdot (y \cdot 5)$

What you need to remember: How numbers are grouped when adding or multiplying will not change the result.

Identity Properties

Addition:	$a + 0 = a$	$0 + 7 = 7$

What you need to remember: Adding zero to a number results in the number.

Multiplication:	$a \cdot 1 = a$	$1 \cdot 4 = 4$

What you need to remember: Multiplying a number by one results in the number

Inverse Properties

Addition:	$a + (-a) = 0$	$-5 + 5 = 0$

What you need to remember: Adding opposites results in zero.

Multiplication:	$a \cdot \frac{1}{a} = 1$	$3 \cdot \frac{1}{3} = 1$

What you need to remember: Reciprocals multiplied together equal one.

Distributive Property

$a(b + c) = ab + ac$

$3(9 + m) = 3 \cdot 9 + 3 \cdot m$

What you need to remember: This is the same as $(9 + m) + (9 + m) + (9 + m) = 9 + 9 + 9 + m + m + m$