PROPERTIES OF REAL NUMBERS

1) **Commutative Property**: Order of addition or multiplication does not matter.

Let a and b be any real numbers.

$$a+b=b+a$$

$$a\cdot b=b\cdot a$$

2) **Associative Property**: For the operations of addition or multiplication, grouping does not matter.

Let a, b, and c be any real numbers.

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

$$a\cdot(b\cdot c)=(a\cdot b)\cdot c$$

3) **Identity Property**: 0 is the additive identity value and 1 is the multiplicative identity value

Let a be any real number

$$a+0=a=0+a$$

$$a\cdot 1=a=1\cdot a$$

4) **Distributive Property**: For an expression; converting between multiplication and addition.

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

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