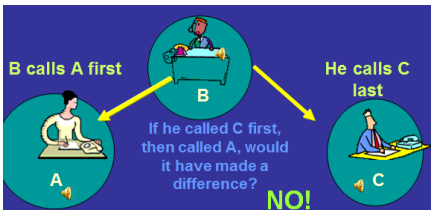
Definitions for Properties of Mathematics

Associative Properties:



Associative Property of Addition

When three or more numbers are added, the sum is the same regardless of the grouping of the addends.

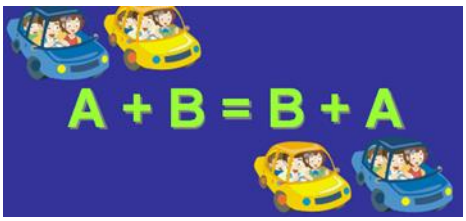
- For example (a + b) + c = a + (b + c)
- For example (3 + 2) + 5 = 3 + (2 + 5)

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 x b) x c = a x (b x c)
- For example (6 x 9) x 7 = 6 x (9 x 7)

Commutative properties:



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
- For example 2 + 3 = 3 + 2

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 x b = b x a
- For example 3 x 9 = 9 x 3

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 x (b + c) = a x b + a x c
- For example 2 x (5 + 7) = (2 x 5) + (2 x 7)

Identity Property of Addition

The sum of any number and zero is the original number.

- For example a + 0 = a.
- For example 5 + 0 = 5

Identity Property of Multiplication

The product of any number and one is that number.

- For example a x 1 = a
- For example 23 x 1 = 23

Symmetric property: like a mirror same meaning around the = side just opposite the equal sign is the mirror.

- **For example: Z=1 and 1=Z**

Transitive property : if they two letters are equal to the same number than they are equal.

- **Example: a=b and b=c then a=c**
- **A=b and b=5 then a=5**