

Basic Number Properties



There are four basic properties of numbers: commutative, associative, distributive, and identity. You should be familiar with each of these. It is especially important to understand these properties once you reach advanced math such as algebra and calculus.

Commutative Property

a. **Addition.** When two numbers are added, the sum is the same regardless of the order in which the numbers are added.

$$3 + 5 = 8 \quad \text{or} \quad 5 + 3 = 8$$

b. **Multiplication.** When two numbers are multiplied together, the product is the same regardless of the order in which the numbers are multiplied.

$$3 \times 5 = 15 \quad \text{or} \quad 5 \times 3 = 15$$

Associative Property

a. **Addition.** When three or more numbers are added, the sum is the same regardless of the way in which the numbers are grouped.

$$6 + (4 + 3) = 13 \quad \text{or} \quad (6 + 4) + 3 = 13$$

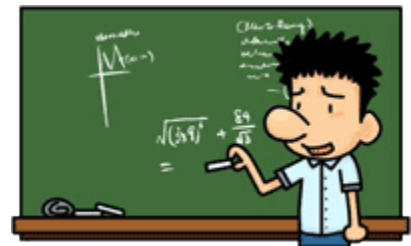
b. **Multiplication.** When three or more numbers are multiplied, the product is the same regardless of the way in which the numbers are grouped.

$$6 \times (4 \times 3) = 72 \quad \text{or} \quad (6 \times 4) \times 3 = 72$$

Distributive Property

The sum of two numbers times a third number is equal to the sum of each addend times the third number.

$$5 \times (7 + 2) = 45 \quad \text{or} \quad 5 \times 7 + 5 \times 2 = 45$$



Identity Property

a. **Addition.** The sum of any number and zero is that number.

$$12 + 0 = 12$$

b. **Multiplication.** The product of any number and one is that number.

$$18 \times 1 = 18$$

Knowing these properties of numbers will improve your understanding and mastery of [math](#).