



# BASIC CONCEPTS OF EQUATIONS

FOR CLASS 7 & 9

PRESENTED BY MOHAMMAD ABU TAYEB HOSSAIN

# EQUATION MEANING

- Mathematically, an equation can be defined as a statement that supports the equality of two expressions, which are connected by the equals sign “=”. For example,  $2x - 5 = 13$ .

Here,

$2x - 5$  and  $13$  are expressions

The sign that connects these two expressions is “=”.

Parts of Equation

The parts of the equation  $2x - 5 = 13$  are explained below.

# EQUATION ALGEBRA

In algebra, an equation is a condition on a variable. It is satisfied only for a definite value of the variable. That means, the equation  $2x - 5 = 13$  is satisfied only for  $x = 9$ .

The below figure shows the difference between expression and equation in algebra.

# EQUATION TYPES

- Algebra considers two prominent families of equations, namely [polynomial equations](#) and linear equations. Polynomial equations with one variable can be written in  $P(x) = 0$ , where  $P$  is a polynomial, and  $ax + b = 0$  is the general form of linear equations. Here,  $a$  and  $b$  are parameters. We can practice geometric or algorithmic methods from linear algebra or mathematical analysis to solve these equations. Also, there are different types of equations, such as:

Linear equations

Quadratic equations

Cubic equations

Quartic equations

Differential equations

Parametric equations

# EQUATION OF A LINE

- The standard form of the equation of a line is  $Ax + By + C = 0$ . The slope-intercept form of an equation is  $y = mx + b$ , where  $m$  is the slope of the line and  $b$  is the  $y$ -intercept. However, there are various types of equations to represent lines.

# EQUATION EXAMPLES

- Go through the examples of equations and their solutions given below.

- **Example 1:**

Identify the variable and the value of the variable that satisfy the given equation for the following:

- (a)  $5b = 60$
- (b)  $x + 12 = 20$
- (c)  $m - 5 = 5$
- (d)  $p/2 = 7$

The background is a solid teal color with a subtle gradient. In the corners, there are decorative white line-art patterns resembling circuit traces or fiber optic paths, with small circles at the end of the lines.

- Thanked By

Mohammad Abu Tayeb Hossain

Craft Instructor

Kachua Government Technical School & College

Kachua, Chandpur.