

CLASS 9 MATHS – CHAPTER 4

LINEAR EQUATIONS IN TWO VARIABLES - ALL FORMULAE

Forms of Linear Equations

- **Standard form:**

$$ax + by = c$$

- **Slope–intercept form:**

$$y = mx + c$$

Where:

- m = slope of the line
- c = y -intercept

Solution of a Linear Equation

- A solution of a linear equation in two variables is an **ordered pair** (x, y) which satisfies the equation.

- A linear equation in two variables has **infinitely many solutions**.

Method to Find Solutions

- Assume any value of one variable.
- Substitute it in the equation to find the other variable.
- Each pair obtained is a solution.

Intercepts of a Line

- **x-intercept:**
Put $y = 0$ in the equation.
- **y-intercept:**
Put $x = 0$ in the equation.

Graph of Linear Equation

- The graph of a linear equation in two variables is always a **straight line**.
- Every point on the straight line is a solution of the equation.
- Every solution of the equation lies on the straight line.

Special Forms and Their Graphs

- Equation of the form:

$$x = a$$

→ Graph is a **vertical straight line** parallel to Y-axis.

- Equation of the form:

$$y = b$$

→ Graph is a **horizontal straight line** parallel to X-axis.