

## 9th Standard-Maths

### Linear Equations in Two Variables

1. **Linear Equations:** Any equation which can be put in the form
2.  $ax + by + c = 0$ , where  $a$ ,  $b$  and  $c$  are real numbers and  $a$  and  $b$  are not both zero is called a linear equation in two variables.

The solution of a linear equation is not affected when

- the same number is added to (or subtracted from) both the sides of the equation.
- you multiply or divide both the sides of the equation by the same non-zero number.

3. A linear equation in two variables has infinitely many solutions.
4. The graph of every linear equation in two variables is a straight line.
5.  $x = 0$  is the equation of the  $y$ -axis and  $y = 0$  is the equation of the  $x$ -axis.
6. The graph of  $x = a$  is a straight line parallel to the  $y$ -axis.
7. The graph of  $y = a$  is a straight line parallel to the  $x$ -axis.
8. An equation of the type  $y = mx$  represents a line passing through the origin.
9. Every point on the graph of a linear equation in two variables is a solution of the linear equation. Moreover, every solution of the linear equation is a point on the graph of the linear equation.
10. **Graph of a Linear Equation in Two Variables:** We know that a linear equation in two variables has infinitely many solutions. We write the solutions as a pair of values and plot, these points on a graph paper and join them to get a line