SYNOPSES:

- The solution of a linear equation is not affected, when:
  (i) The same number is added to (or subtracted from) both the sides of the equation.
  (ii) We multiply or divide both the sides of the equation by the same non-zero number.

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

- A linear equation in two variables is represented geometrically by a line, whose points make up the collection of solutions of the equation, called the *graph* of the linear equation.

- To obtain the graph of a linear equation in two variables, it is enough to plot two points corresponding to two solutions and join them by a line.

- The reason that a degree one polynomial equation $ax + by + c = 0$ is called a *linear equation* is that its geometrical representation is a straight line.

- $x = 0$ is the equation of the y-axis and $y = 0$ is the equation of the x-axis.

- The graph of $x = a$ is a straight line parallel to the y-axis.

- The graph of $y = a$ is a straight line parallel to the x-axis.

- An equation of the type $y = mx$ represents a line passing through the origin.
- 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.