

CHAPTER 03

Pair of Linear Equations in Two Variables

Simultaneous Linear Equations(System of Linear Equations):

Let us try to solve the following linear equation in two variables.

$$-2z + 3t = 6$$

$$\Rightarrow 3t = 6 + 2z$$

$$\Rightarrow t = \frac{6 + 2z}{3}$$

Can we solve this?

No, we cannot. Why because, the number of unknown variables are '2' and there is only one equation.

Question.

How many equations do we need to solve for linear equations in two variables?

Ans.

We need a pair of linear equations in two variables to solve for 'x' and 'y'.

Question.

What do we call such a pair of linear equations?

Ans.

Such a pair of independent linear equations are called simultaneous linear equations of system of linear equations.

Pair of Linear Equations in two Variables:

A pair of linear equations in two variables is a collection of two linear equations involving the same set of two variables.

Example:

$2x - y = 4$; $x + 7y = 9$ is a pair of linear equations.

The general form for a pair of linear equations in two variables 'x' and 'y' is $a_1x + b_1y + c_1 = 0$ & $a_2x + b_2y + c_2 = 0$, where $a_1, b_1, c_1, a_2, b_2, c_2$ are real numbers and $a_1^2 + b_1^2 \neq 0, a_2^2 + b_2^2 \neq 0$.