

# Pair of Linear Equations in Two Variables

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## Class 10<sup>th</sup> Maths - Chapter 3

This is Problem-1.1 from Exercise 3.2

1.  $3x+2y=5$  and  $2x-3y=7$

**Solution:**

$$3x + 2y = 5 \quad (1)$$

$$2x - 3y = 7 \quad (2)$$

$$(3)$$

it can be written as

$$\begin{pmatrix} 3 & 2 & 5 \\ 2 & -3 & 7 \end{pmatrix} \quad (4)$$

$$R_1 \rightarrow 2R_1 - 3R_2 \quad (5)$$

$$\begin{pmatrix} 0 & 13 & -11 \\ 2 & -3 & 7 \end{pmatrix} \quad (6)$$

$$R_1 \rightarrow \frac{R_1}{13} \quad (7)$$

$$\begin{pmatrix} 0 & 1 & \frac{-11}{13} \\ 2 & -3 & 7 \end{pmatrix} \quad (8)$$

$$R_2 \rightarrow R_2 + 3R_1 \quad (9)$$

$$\begin{pmatrix} 0 & 1 & \frac{-11}{13} \\ 2 & 0 & \frac{58}{13} \end{pmatrix} \quad (10)$$

$$R_2 \rightarrow \frac{R_2}{2} \quad (11)$$

$$\begin{pmatrix} 0 & 1 & \frac{-11}{13} \\ 1 & 0 & \frac{29}{13} \end{pmatrix} \quad (12)$$

$$(13)$$

therefore  $y=-11/13$  and  $x=29/8$