



Pair of Linear Equations in Two variables Ex 3.3 Q6

Answer :

The given equations are:

$$\frac{x}{7} + \frac{y}{3} = 5 \dots (i)$$

$$\frac{x}{2} - \frac{y}{9} = 6 \dots (ii)$$

Multiply equation (i) by $\frac{1}{3}$ and add both equations we get

$$\frac{x}{21} + \frac{y}{9} = \frac{5}{3}$$

$$\frac{x}{2} - \frac{y}{9} = 6$$

$$\frac{23x}{42} = \frac{23}{3}$$

$$\Rightarrow x = 14$$

Put the value of x in equation (i) we get

$$\frac{14}{7} + \frac{y}{3} = 5$$

$$\Rightarrow \frac{y}{3} = 3$$

$$\Rightarrow y = 9$$

Hence the value of $x = 14$ and $y = 9$.

Pair of Linear Equations in Two variables Ex 3.3 Q7

Answer :

The given equations are:

$$\frac{x}{3} + \frac{y}{4} = 11 \dots (i)$$

$$\frac{5x}{6} - \frac{y}{3} = -7 \dots (ii)$$

Multiply equation (i) by $\frac{1}{3}$ and equation (ii) by $\frac{1}{4}$ and add both equations we get

$$\begin{array}{r} \frac{x}{9} + \frac{y}{12} = \frac{11}{3} \\ \frac{5x}{24} - \frac{y}{12} = \frac{-7}{4} \\ \hline \frac{23x}{72} = \frac{23}{12} \\ \Rightarrow x = 6 \end{array}$$

Put the value of x in equation (i) we get

$$\begin{array}{r} \frac{6}{3} + \frac{y}{4} = 11 \\ \Rightarrow \frac{y}{4} = 9 \\ \Rightarrow y = 36 \end{array}$$

Hence the value of $\boxed{x=6}$ and $\boxed{y=36}$.

Pair of Linear Equations in Two variables Ex 3.3 Q8

Answer :

The given equations are:

$$\frac{4}{x} + 3y = 8 \dots (i)$$

$$\frac{6}{x} - 4y = -5 \dots (ii)$$

Multiply equation (i) by 4 and equation (ii) by 3 and add both equations we get

$$\begin{array}{r} \frac{16}{x} + 12y = 32 \\ \frac{18}{x} - 12y = -15 \\ \hline \frac{34}{x} = 17 \\ \Rightarrow x = 2 \end{array}$$

Put the value of x in equation (i) we get

$$\begin{array}{r} \frac{4}{2} + 3y = 8 \\ \Rightarrow 3y = 6 \\ \Rightarrow y = 2 \end{array}$$

Hence the value of $\boxed{x=2}$ and $\boxed{y=2}$.

Pair of Linear Equations in Two variables Ex 3.3 Q9

Answer :

The given equations are:

$$x + \frac{y}{2} = 4 \dots (i)$$

$$\frac{x}{3} + 2y = 5 \dots (ii)$$

Multiply equation (i) by 4 and subtract equations (i) – (ii), we get

$$4x + 2y = 16$$

$$\frac{x}{3} + 2y = 5$$

$$\frac{11x}{3} = 11$$

$$\Rightarrow x = 3$$

Put the value of x in equation (i), we get

$$3 + \frac{y}{2} = 4$$

$$\Rightarrow \frac{y}{2} = 1$$

$$\Rightarrow y = 2$$

Hence the value of x and y are $\boxed{x = 3}$ and $\boxed{y = 2}$

Pair of Linear Equations in Two variables Ex 3.3 Q10

Answer :

The given equations are:

$$x + 2y = \frac{3}{2} \dots (i)$$

$$2x + y = \frac{3}{2} \dots (ii)$$

Multiply equation (ii) by 2 and subtract equation (ii) from (i) we get

$$x + 2y = \frac{3}{2}$$

$$4x + 2y = 3$$

$$-3x = \frac{-3}{2}$$

$$\Rightarrow x = \frac{1}{2}$$

Put the value of x in equation (i), we get

$$\frac{1}{2} + 2y = \frac{3}{2}$$

$$\Rightarrow 2y = 1$$

$$\Rightarrow y = \frac{1}{2}$$

Hence the value of $\boxed{x = \frac{1}{2}}$ and $\boxed{y = \frac{1}{2}}$

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