Pair of Linear Equations in Two varibles Ex 3.3 Q6

Answer :

The given equations are:

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

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

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 $\boxed{x=14}$ and $\boxed{y=9}$.

Pair of Linear Equations in Two varibles Ex 3.3 Q7

Answer :

The given equations are:

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

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

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

$\frac{x}{9}+\frac{y}{12}=\frac{11}{3}$

$\frac{5x}{24}-\frac{y}{12}=\frac{-7}{4}$

$\frac{23x}{72}=\frac{23}{12}$

$\Rightarrow x=6$

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

$\frac{6}{3}+\frac{y}{4}=11$

$\Rightarrow \frac{y}{4}=9$

$\Rightarrow y=36$

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

Pair of Linear Equations in Two varibles Ex 3.3 Q8

Answer :

The given equations are:

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

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

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

$\frac{16}{x}+12y=32$

$\frac{18}{x}-12y=-15$

$\frac{34}{x}=17$

$\Rightarrow x=2$

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

$\frac{4}{2}+3y=8$

$\Rightarrow 3y=6$

$\Rightarrow y=2$

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

Pair of Linear Equations in Two varibles Ex 3.3 Q9

Answer :

The given equations are:

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

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

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

$$\begin{array}{l} 4x+2y=16 \\ \underline{\frac{x}{3}+2y=5} \\ \frac{11x}{3}=11 \end{array}$$

$\Rightarrow x=3$

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 varibles Ex 3.3 Q10

Answer :

The given equations are:

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

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

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

$$\begin{array}{l} x+2y=\frac{3}{2} \\ \underline{4x+2y=3} \\ -3x=\frac{-3}{2} \end{array}$$

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

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

********** END **********