Pair of Linear Equations in Two varibles Ex 3.3 Q36

**Answer :**

The given equations are:

$23x-29y=98$ ... $(i)$

$29x-23y=110$ ... $(ii)$

Multiply equation $(i)$ by $23$ and equation $(ii)$ by $29$ and subtract (ii) from (i) we get

$529x-667y=2254$

$841x-667y=3190$

$-312x=-936$

$\Rightarrow x=3$

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

$23\times 3-29y=98$

$\Rightarrow -29y=29$

$\Rightarrow y=-1$

Hence the value of $\boxed{x=3}$ and $\boxed{y=-1}$

Pair of Linear Equations in Two varibles Ex 3.3 Q37

**Answer :**

The given equations are:

$x-y+z=4$ ... $(i)$

$x-2y-2z=9$ ...$(ii)$

$2x+y+3z=1$ ...$(iii)$

First of all we find the value of $x$

$x=4+y-z$

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

$4+y-z-2y-2z=9$

$\Rightarrow -3z-y=5$ ...$(iv)$

Put the value of $x$ and $y$ in equation in $(iii)$ we get

$2(4+y-z)+y+3z=1$

$\Rightarrow 8+2y-2z+y+3z=1$

$\Rightarrow 3y+z=-7$ ...$(v)$

Multiply equation $(iv)$ by $3$ and add equations $(iv)$ and $(v)$, we get

$-9z-3y=15$

$3y+z=-7$

$-8z=8$

$\Rightarrow z=-1$

Put the value of $z$ in equation $(v)$, we get

$3y-1=-7$

$\Rightarrow 3y=-6$

$\Rightarrow y=-2$

Put the value of $y$ and $z$ in equation $(i)$ we get

$x-(-2)-1=4$

$\Rightarrow x=3$

Hence the value of $\boxed{x=3}$, $\boxed{y=-2}$ and $\boxed{z=-1}$.

Pair of Linear Equations in Two varibles Ex 3.3 Q38

**Answer :**

The given equations are:

$x-y+z=4 \ \ldots (i)$

$x+y+z=2 \ \ldots (ii)$

$2x+y-3z=0 \ \ldots (iii)$

First of all we find the value of $x$

$x=4+y-z$

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

$4+y-z+y+z=2$

$\Rightarrow 2y=-2$

$\Rightarrow y=-1$

Put the value of $x$ and $y$ in equation in $(iii)$ we get

$2(4+y-z)+y-3z=0$

$\Rightarrow 8-2-2z-1-3z=0$

$\Rightarrow -5z=-5$

$\Rightarrow z=1$

Put the value of $y$ and $z$ in equation $(i)$, we get

$x-(-1)+1=4$

$\Rightarrow x=2$

Hence the value of $\boxed{x=2}$, $\boxed{y=-1}$ and $\boxed{z=1}$.

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