



NCERT solutions for class 9 Maths Linear Equations in Two Variables Ex 4.1

**Q1.** The cost of a notebook is twice the cost of a pen. Write a linear equation in two variables to represent this statement.

(Take the cost of a notebook to be Rs  $x$  and that of a pen to be Rs  $y$ ).

**Ans:** Let the cost of a notebook be Rs.  $x$ .

Let the cost of a pen be Rs.  $y$ .

We need to write a linear equation in two variables to represent the statement, "Cost of a notebook is twice the cost of a pen".

Therefore, we can conclude that the required statement will be  $x = 2y$ .

**Q2.** Express the following linear equations in the form  $ax + by + c = 0$  and indicate the values of  $a$ ,  $b$  and  $c$  in each case:

(i)  $2x + 3y = 9.35$

(ii)  $x - \frac{y}{5} - 10 = 0$

(iii)  $-2x + 3y = 6$

(iv)  $x = 3y$

(v)  $2x = -5y$

(vi)  $3x + 2 = 0$

(vii)  $y - 2 = 0$

(viii)  $5 = 2x$

**Ans:** (i)  $2x + 3y = 9.\overline{35}$

We need to express the linear equation  $2x + 3y = 9.\overline{35}$  in the form  $ax + by + c = 0$  and indicate the values of  $a$ ,  $b$  and  $c$ .

$2x + 3y = 9.\overline{35}$  can also be written as  
 $2x + 3y - 9.\overline{35} = 0$ .

We need to compare the equation  $2x + 3y - 9.\overline{35} = 0$  with the general equation  $ax + by + c = 0$ , to get the values of  $a$ ,  $b$  and  $c$ .

Therefore, we can conclude that  
 $a = 2, b = 3$  and  $c = -9.\overline{35}$ .

(ii)  $x - \frac{y}{5} - 10 = 0$

We need to express the linear equation  $x - \frac{y}{5} - 10 = 0$  in the form  $ax + by + c = 0$  and indicate the values of  $a$ ,  $b$  and  $c$ .

$x - \frac{y}{5} - 10 = 0$  can also be written as

$$1 \cdot x - \frac{y}{5} - 10 = 0.$$

We need to compare the equation  $1 \cdot x - \frac{y}{5} - 10 = 0$  with the general equation  $ax + by + c = 0$ , to get the values of  $a$ ,  $b$  and  $c$ .

Therefore, we can conclude that

$$a = 1, b = -\frac{1}{5} \text{ and } c = -10.$$

(iii)  $-2x + 3y = 6$

We need to express the linear equation  $-2x + 3y = 6$  in the form  $ax + by + c = 0$  and indicate the values of  $a$ ,  $b$  and  $c$ .

$-2x + 3y = 6$  can also be written as  
 $-2x + 3y - 6 = 0.$

We need to compare the equation  $-2x + 3y - 6 = 0$  with the general equation  $ax + by + c = 0$ , to get the values of  $a$ ,  $b$  and  $c$ .

Therefore, we can conclude that

$$a = -2, b = 3 \text{ and } c = -6.$$

(iv)  $x = 3y$

We need to express the linear equation  $x = 3y$  in the form  $ax + by + c = 0$  and indicate the values of  $a$ ,  $b$  and  $c$ .

$x = 3y$  can also be written as  $x - 3y + 0 = 0$ .

We need to compare the equation  $x - 3y + 0 = 0$  with the general equation  $ax + by + c = 0$ , to get the values of  $a$ ,  $b$  and  $c$ .

Therefore, we can conclude that  
 $a = 1, b = -3$  and  $c = 0$ .

(v)  $2x = -5y$

We need to express the linear equation  $2x = -5y$  in the form  $ax + by + c = 0$  and indicate the values of  $a$ ,  $b$  and  $c$ .

$2x = -5y$  can also be written as  $2x + 5y + 0 = 0$ .

We need to compare the equation  $2x + 5y + 0 = 0$  with the general equation  $ax + by + c = 0$ , to get the values of  $a$ ,  $b$  and  $c$ .

Therefore, we can conclude that  
 $a = 2, b = 5$  and  $c = 0$ .

(vi)  $3x + 2 = 0$

We need to express the linear equation  $3x+2=0$  in the form  $ax+by+c=0$  and indicate the values of  $a$ ,  $b$  and  $c$ .

$3x+2=0$  can also be written as  $3x+0\cdot y+2=0$ .

We need to compare the equation  $3x+0\cdot y+2=0$  with the general equation  $ax+by+c=0$ , to get the values of  $a$ ,  $b$  and  $c$ .

Therefore, we can conclude that  
 $a=3, b=0$  and  $c=2$ .

(vii)  $y-2=0$

We need to express the linear equation  $y-2=0$  in the form  $ax+by+c=0$  and indicate the values of  $a$ ,  $b$  and  $c$ .

$y-2=0$  can also be written as  $0\cdot x+1\cdot y-2=0$ .

We need to compare the equation  $0\cdot x+1\cdot y-2=0$  with the general equation  $ax+by+c=0$ , to get the values of  $a$ ,  $b$  and  $c$ .

Therefore, we can conclude that  
 $a=0, b=1$  and  $c=-2$ .

(viii)  $5=2x$

We need to express the linear equation  $5=2x$  in the form  $ax+by+c=0$  and indicate the values of  $a$ ,  $b$  and  $c$ .

$5=2x$  can also be written as  $-2x+0\cdot y+5=0$ .

We need to compare the equation  $-2x+0\cdot y+5=0$  with the general equation  $ax+by+c=0$ , to get the values of  $a$ ,  $b$  and  $c$ .

Therefore, we can conclude that  
 $a=-2, b=0$  and  $c=5$ .

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