

CBSE Class 9 Mathematics
NCERT Solutions
CHAPTER 3
Linear Equations in Two Variables(Ex. 4.1)

1. 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 $x = 2y$ or $x - 2y = 0$

2. 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) $2x + 3y = 9.3\bar{5}$

(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 $a = 1$, $b = -\frac{1}{5}$ 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 $a = -2$, $b = 3$ 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 $c = 5$.