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

(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) $2x+3y=9.3\overline{5}$

We need to express the linear equation $2x+3y=9.3\overline{5}$ in the form $ax + by + c = 0$ and indicate the values of a, b and c.

$2x+3y=9.3\overline{5}$ can also be written as $2x+3y-9.3\overline{5}=0.$

We need to compare the equation $2x+3y-9.3\overline{5}=0$ with the general equation $ax + by + c = 0$, to get the values of a, b and c.

Therefore, we can conclude that $a=2, b=3$ and $c=-9.3\overline{5}$.

(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 $c=5$.

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