

# VIDYA BHAWAN BALIKA VIDYA PITH

## शक्तिउत्थानआश्रमलखीसरायबिहार

Class 09.

Sub-.Maths

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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 ₹ x and that of a pen to be ₹ y)

Solution:

Let the cost of a notebook to be = ₹ x

Let the cost of a pen to be = ₹ y

According to the question,

The cost of a notebook is twice the cost of a pen.

i.e., Cost of a notebook = 2×Cost of a pen

$$x = 2y$$

$$x = 2y$$

$$x - 2y = 0$$

$x - 2y = 0$  is the linear equation in two variables to represent the statement 'The cost of a notebook is twice the cost of a pen'.

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)  $2x + 3y = 9.\overline{35}$

Solution:

$$2x + 3y = 9.\overline{35}$$

Re-arranging the equation, we get,

$$2x + 3y - 9.\overline{35} = 0$$

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

$$2x + 3y + (-9.\overline{35}) = 0$$

Now comparing  $2x + 3y + (-9.\overline{35}) = 0$  with  $ax + by + c = 0$

We get,

$$a = 2$$

$$b = 3$$

$$c = -9.\overline{35}$$

**(ii)  $x - (y/5) - 10 = 0$**

Solution:

The equation  $x - (y/5) - 10 = 0$  can be written as,

$$1x + (-1/5)y + (-10) = 0$$

Now comparing  $x + (-1/5)y + (-10) = 0$  with  $ax + by + c = 0$

We get,

$$a = 1$$

$$b = -(1/5)$$

$$c = -10$$

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

Solution:

$$-2x + 3y = 6$$

Re-arranging the equation, we get,

$$-2x + 3y - 6 = 0$$

The equation  $-2x + 3y - 6 = 0$  can be written as,

$$(-2)x + 3y + (-6) = 0$$

Now comparing  $(-2)x + 3y + (-6) = 0$  with  $ax + by + c = 0$

We get,  $a = -2$

$$b = 3$$

$$c = 6$$

**(iv)  $x = 3y$**

Solution:

$$x = 3y$$

Re-arranging the equation, we get,

$$x - 3y = 0$$

The equation  $x - 3y = 0$  can be written as,

$$1x + (-3)y + (0)c = 0$$

Now comparing  $1x+(-3)y+(0)c = 0$  with  $ax+by+c = 0$

We get,  $a = 1$

$b = -3$

$c = 0$