Exerise 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 ₹ x and that of a pen to be ₹ y).

Sol. Let cost of a notebook = ₹ x and cost of a pen = ₹ y.

According to given condition,

$$x = 2y \Rightarrow x - 2y = 0.$$

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

Sol. (*i*) $2x + 3y = 9.3\overline{5} \Rightarrow 2x + 3y - 9.3\overline{5} = 0$.

Here, $a = 2$, $b = 3$, $c = -9.3\overline{5}$.

(*ii*) $x - \frac{y}{5} - 10 = 0$, here $a = 1$, $b = \frac{-1}{5}$ and $c = -10$.

(*iii*) $-2x + 3y = 6 \Rightarrow -2x + 3y - 6 = 0$.

Here, $a = -2$, $b = 3$, $c = -6$.

(*iv*) $x = 3y \Rightarrow 1x - 3y + 0 = 0$.

Here, $a = 1$, $b = -3$, $c = 0$.

(*v*) $2x = -5y \Rightarrow 2x + 5y + 0 = 0$.

Here, $a = 2$, $b = 5$, $c = 0$.

(*vi*) $3x + 2 = 0 \Rightarrow 3x + 0y + 2 = 0$.

Here, $a = 3$, $b = 0$, $c = 2$.

(*vii*) $y - 2 = 0 \Rightarrow 0.x + 1.y - 2 = 0$.

Here, $a = 0$, $b = 1$, $c = -2$.

(*viii*) $5 = 2x \Rightarrow 2x + 0.y - 5 = 0$.

Here, $a = 2$, $b = 0$, $c = -5$.