SUBJECT- MATHEMATICS

CLASS-IX

CHAPTER NUMBER - 4

CHAPTER NAME - LINEAR EQUATIONS IN TWO VARIABLES

WORKSHEET : 1

1. 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. $x - \frac{y}{5} - 10 = 0$
   ii. $y - 2 = 0$
2. Cost of a pen is two and half times the cost of pencil. Express this situation as a linear equation in two variables.
3. If the point $(3, 4)$ lies on the graph of the equation $3y = ax + 7$, find the value of a.
4. Show that the points A (1, 2), B (– 1, – 16) and C (0, – 7) lie on the graph of the linear equation $y = 9x - 7$.
5. Find m, if point (7, -3) lies on the equation $\left(y - \frac{3}{7}\right) = m\left(x - \frac{2}{7}\right)$.
6. A fraction becomes $\frac{1}{3}$, if 2 is added to both numerator and denominator. If 3 is added to both numerator and denominator it becomes $\frac{2}{5}$. Assuming the original fraction to be $\frac{x}{y}$, form a pair of linear equations in two variables for the problem find the fraction.
7. If $(p, 2p + 1)$ is a solution of the linear equation $4x + 3y = 23$. Find the value of p.
8. Find the value of k, if (1, -1) is a solution of the equation $3x - ky = 8$. Also, find the coordinates of another point lying on its graph.

In some countries temperature is measured in Fahrenheit, whereas in countries like India it is measured in Celsius. Here is a linear equation that converts Fahrenheit to Celsius:

$$F = \left[\frac{9}{5}\right]C + 32$$

If the temperature is –40°C, then what is the temperature in Fahrenheit?

9. The taxi fare in a city is as follows: For the first kilometre, the fare is Rs 8 and for the subsequent distance it is Rs 5 per km. Taking the distance covered as x km and total fare as Rs. y, write a linear equation for this information, and draw its graph.

ANSWERS:

1. (i) $a = 5,\ b = -1,\ c = -50$ (ii) $a = 0,\ b = 1,\ c = -2$
2. $2x - 5y = 0$
3. $a = \frac{5}{3}$
4. Graph
5. $m = \frac{-24}{47}$
6. $\frac{1}{7}$
7. $p = 2$
8. $(6,\ 2)$
9. $F = -40°$
10. $y = 5x + 3$