

CLASS-9-MATHEMATICS  
CHAPTER-4  
LINEAR EQUATIONS IN TWO VARIABLES

**WORK SHEET 3 of 3 (MISCELLANEOUS)**

- 1) Find the points where the graph of the equation  $3x + 4y = 12$  cuts the  $x$ -axis and the  $y$ -axis.
- 2) At what point does the graph of the linear equation  $x + y = 5$  meet a line which is parallel to the  $y$ -axis, at a distance 2 units from the origin and in the positive direction of  $x$ -axis?
- 3) Determine the point on the graph of the equation  $2x + 5y = 20$  whose  $x$ -coordinate is  $\frac{5}{2}$  times its ordinate.
- 4) Draw the graph of the equation represented by the straight line which is parallel to the  $x$ -axis and is 4 units above it.
- 5) Draw the graphs of linear equations  $y = x$  and  $y = -x$  on the same cartesian plane. Where do they meet?
- 6) Determine the point on the graph of the linear equation  $2x + 5y = 19$ , whose  $1\frac{1}{2}$  ordinate is times its abscissa.
- 7) Draw the graph of the equation represented by a straight line which is parallel to the  $x$ -axis and at a distance 3 units below it.
- 8) Draw the graph of the linear equation whose solutions are represented by the points having the sum of the coordinates as 10 units.
- 9) Write the linear equation such that each point on its graph has an ordinate 3 times its abscissa.
- 10) If the point (3, 4) lies on the graph of  $3y = ax + 7$ , then find the value of  $a$ .
- 11) How many solution(s) of the equation  $2x + 1 = x - 3$  are there on the:
  - (i) Number line
  - (ii) Cartesian plane
- 12) Find the solution of the linear equation  $x + 2y = 8$  which represents a point on
  - (i)  $x$ -axis
  - (ii)  $y$ -axis
- 13) For what value of  $c$ , the linear equation  $2x + cy = 8$  has equal values of  $x$  and  $y$  for its solution?

- 14) Let  $y$  varies directly as  $x$ . If  $y = 12$  when  $x = 4$ , then write a linear equation. What is the value of  $y$  when  $x = 5$ ?
- 15) The Auto rikshaw fare in a city is charged Rs 10 for the first kilometer and @ Rs 4 per kilometer for subsequent distance covered. Write the linear equation to express the above statement. Draw the graph of the linear equation.
- 16) The work done by a body on application of a constant force is the product of the constant force and the distance travelled by the body in the direction of force. Express this in the form of a linear equation in two variables and draw its graph by taking the constant force as 3 units. What is the work done when the distance travelled is 2 units. Verify it by plotting the graph.
- 17) Show that the points A (1, 2), B (– 1, – 16) and C (0, – 7) lie on the graph of the linear equation  $y = 9x - 7$ .
- 18) Draw the graph of the linear equation  $3x + 4y = 6$ . At what points, the graph cuts the  $x$ -axis and the  $y$ -axis?
- 19) If the temperature of a liquid can be measured in Kelvin units as  $x^\circ \text{K}$  or in Fahrenheit units as  $y^\circ \text{F}$ , the relation between the two systems of measurement of temperature is given by the linear equation
- $$y = \frac{9}{5}(x - 273) + 32$$
- (i) Find the temperature of the liquid in Fahrenheit if the temperature of the liquid is  $313^\circ \text{K}$ .
- (ii) If the temperature is  $158^\circ \text{F}$ , then find the temperature in Kelvin.
- 20) The force exerted to pull a cart is directly proportional to the acceleration produced in the body. Express the statement as a linear equation of two variables and draw the graph of the same by taking the constant mass equal to 6 kg. Read from the graph, the force required when the acceleration produced is (i)  $5 \text{ m/sec}^2$ , (ii)  $6 \text{ m/sec}^2$ .

\*\*\*\*\*