Chapter - 4

(Linear Equations in two variables)

Key Concept

- An equation of the form $ax + by + c = 0$ where a, b and c are real numbers such that a and b are not both zero is called a linear equation in two variables.
- A pair of values of x and y which satisfy the equation $ax + by + c = 0$ is called a solution of the equation.
- A linear equation in two variables has infinitely many solutions.
- The graph of every linear equation in two variables is a straight line.
- y = 0 is the equation of x-axis and x = 0 is equation of y-axis.
- The graph of $x = a$ is a straight line parallel to the y-axis.
- The graph of y = a is a straight line parallel to the x-axis.
- An equation of the type y = mx represent a line passing through the origin.

Section - A

Q.1 The point (a, a) always lies on the line

(a) y = x (b) y - axis (c) x - axis (d) x + y = 0

Q.2 The point (m, -m) always lies on the line.

(a) $x = m$ (b) $y = -m$ (c) $x + y = 0$ (d) $x = y$

Q.3 If $x = -2\ and\ y = 3$ is a solution of the equation $3x - 5y = a$, then value of a is

(a) 19 (b) -21 (c) -9 (d) -18

Q.4 x = 3, y = -2 is a solution of the equation.

(a) $x + y = 5$ (b) $3x - 2y = 11$

(c) $4x - 3y = 18$ (d) $3x + y = 5$

Q.5 x = -5 can be written in the form of equation in two variable as

(a) $x + o.y + 5 = 0$ (b) $o.x + y = -5$

(c) $o.x + o.y = -5$ (d) $o.x + o.y = +5$

Q.6 The linear equation $3x - 2y = 5$ has

(a) a unique solution

(b) two solutions

(c) no solution

(d) infinitely many solutions.

Q.7 The equation of x-axis is

(a) $x = k$ (b) y = 0 (c) $x = 0$ (d) y = k

Q.8 Any point on the y-axis is of the form

(a) (x, y) (b) (x, x) (c) (0,y) (d) $(x, 0)$

Section - B

Q.9 Draw the graph of the equation $x - 2y = 0$

Q.10 The cost of a pen is four times the cost of a pencil express the statement as a linear equation in two variables.

Q.11 Write any four solutions for each of the following equations.

(a) $5x - 2 = 0$

(b) $3x + y = 7$

Q.12 Find the value of a if (-1, 1) is a solution of the equation $3x - ay = 5$

Q.13 If (3,1) is a solution of the equation $3x + 2y = k$, find the value of k.

Q.14 Verify that x = 2, y = -1, is a solution of the linear equation $7x + 3y = 11$

Q.15 Write one solution of each of the following equations

(a) $4x - 3y = 0$

(b) $2y - y = 3$

Q.16 The cost of 2 pencils is same as the cost of 5 erasers. Express the statement as a linear equation in two variables.

Section - C

Q.17 Give the geometrical representation of the equation y = 3 as an equation.

(i) In one variable

(ii) In two variables

Q.18 Ramesh is driving his car with a uniform speed of 80 km/hr. Draw the time distance graph. Form the graph find the distance travelled by him in.

(i) $1\frac{1}{2}\ hr$ (ii) 3 hours

Q.19 Draw the graph of each of the equations $2x - 3y + 5 = 0$ and $5x + 4y + 1 = 0$ and find the coordinates of the point where the lines meet.

Q.20 Draw the graph of the equation $5x + 6y - 28 = 0$ and check whether the point (2,3) lies on the line.

Q.21 The taxi fare in a city is as follows: For the first kilometer, 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, writes a linear equation for this information, and draw its graph.

Q.22 Write three solutions for the equation $7x - 8y = 13$

Answer

Q.1	a	Q.2	c	Q.3	b	Q.4	c	Q.5	a	Q.6	d
Q.7	b	Q. 8	c	Q.19 (-1, 1)		Q.20	Yes				
