

UNIT 03: LINEAR EQUATIONS IN 2 VARIABLES

I. Multiple Choice Questions:

Choose the correct answer from the given four options in the following questions:

- The pair of equations $y = 0$ and $y = -7$ has
(a) 1 solution (b) 2 solutions
(c) no solution (d) infinite solutions
- If a pair of equations is consistent, then the lines will be
(a) Parallel (b) always coincident
(c) intersecting or coincident (d) Non parallel
- The value of k for which $2x + 3y = 5$ and $4x + ky = 10$ have infinite number of solutions, is
(a) 1 (b) 3 (c) 0 (d) 6
- The graph of $y = 1$ is a line parallel to the
(a) x axis (b) y axis
(c) both x axis and y axis (d) None of these
- If $x = a$, $y = b$ is the solution of the equations $x - y = 2$ and $x + y = 4$, then the values of a and b are
(a) 3 and 5 (b) 5 and 3 (c) 3 and 1 (d) -1 and -3

II. Fill in the blanks:

Complete the following sentences:

- A pair of linear equations is inconsistent, if it has
- A dependent pair of linear equations is always
- Geometrically every solution of an equation is a.....
- Graph of a linear equation of the form $ax + by + c = 0$ is a.....
- A pair of linear equations having a unique solution will graphically.....

III. Subjective Questions:

- Draw the graphs of $2x + y = 6$ and $2x - y + 2 = 0$. Shade the region bounded by these lines and x axis. Also find the area of the shaded region.
- The largest angle of a triangle is equal to the sum of the other two angles. The smaller angle is one fourth of the largest angle. Find the angles of the triangle.
- If $2x + y = 23$ and $4x - y = 19$, find the values of $5y - 2x$ and $y/x - 2$.
- Two straight paths are represented by the equations $x - 3y = 2$ and $-2x + 6y = 5$. Check whether the Paths cross each other or not.
- A person, rowing at the rate of 5 Km/h in still water, takes thrice as much time in going 40 km upstream as in going 40 Km downstream. Find the speed of the stream.

IV. HOTS Questions:

1. Ajay travels 14 Km to his home partly by car and partly by bus. He takes half an hour if he travels 2 km by car, and the remaining distance by bus. On the other hand, if he travels 4 Km by Car and the remaining distance by bus, he takes 9 minutes longer. Find the speed of the car and that of the bus.
2. Solve for x and y: $(a + 2b)x + (2a - b)y = 2$; $(a - 2b)x + (2a + b)y = 3$.

V. Project Work:

Prepare a chart on the life of the mathematician who first introduced letters to represent quantities.