

Ch – 3 (Pair of linear equations in two variables)

Section – A

(5 × 1 = 5)

- The graphical representation of the pair of equations $x + 2y = 4$ and $2x + 4y = 12$ gives us a pair of :
(a) parallel lines (b) intersecting lines (c) coincident lines (d) None
- Which of the following pairs of equations is in consistent?
(a) $3x - 2y = 8 ; 2x + 3y = 1$ (c) $3x - y = 8 ; x - \frac{y}{3} = 3$
(c) $lx - y = m ; x + my = l$ (d) $5x - y = 10 ; 10x - 2y = 20$
- The vertices of the triangle obtained by the straight lines representing the linear equations $y = x$, $y = 0$ and $x + y = 10$ are:
(a) (0, 0), (5, 5), (0, 10) (b) (0, 0), (5, 5), (10, 0)
(c) (0, 0), (1, 1), (5, 5) (d) (0, 1), (1, 0), (1, 1)
- The solution of the pair of equations $\frac{a}{x} - \frac{b}{y} = 0$, $\frac{ab^2}{x} + \frac{a^2b}{y} = a^2 + b^2$ is:
(a) $x = a, y = b$ (b) $x = -a, y = b$ (c) $x = a, y = -b$ (d) $x = -a, y = -b$
- If $\sqrt{ax} - \sqrt{by} = b - a$ and $\sqrt{bx} - \sqrt{ay} = 0$, then the value of xy is:
(a) $a + b$ (b) $a - b$ (c) \sqrt{ab} (d) $-\sqrt{ab}$

Section – B

(3 × 2 = 6)

- Solve for x and y : $x + \frac{6}{y} = 6$ and $3x - \frac{8}{y} = 5$
- The sum of the numerator and the denominator of a fraction is 20. If we subtract 5 from the numerator and 5 from the denominator, then the ratio of the numerator and the denominator will be 1: 4. Find the fraction.
- For all real values of c , the pair of equations $x - 2y = 8$ and $5x - 10y = c$ has a unique solution. Justify whether it is true or false.

Section – C

(2 × 3 = 6)

- Half the perimeter of a rectangular garden, whose length is 4 m is more than its width is 36 m. Find the dimensions of the garden. (Use substitution method)
- Using Cross Multiplication method solve the equations: $\frac{ax}{b} - \frac{bx}{a} = a + b$ and $ax - by = 2ab$

Section – D

(2 × 4 = 8)

- A railway half ticket costs half the full ticket fare and the reservation charge is the same on the half ticket as on the full ticket. One reserved first class ticket from Mumbai to Ahmedabad costs ₹ 216 and one full and one half reserved first class tickets cost ₹ 327. What is the basic first class full ticket fare and what is the reservation charge?
- Draw the graph of the following equations $2x - y + 6 = 0$, $4x + 5y - 16 = 0$. Determine the coordinates of the vertices of the triangle formed by these lines and the x - axis. Also, find the area of the triangle.