Ch-4 Linear Equations in 2 Variables

1. Show that x = 1, y = 3 satisfy the linear equation 3x – 4y + 9 = 0.
2. Is (3, 2) a solution of x + y = 6?
3. Is $\left(2,\frac{8}{3}\right)$ a solution of 2x + 3y = 12?
4. Write the equation of x-axis. Also, write the equation of y-axis.
5. Express $-2x + \frac{3}{2}y = 4$ in the form of ax + by + c = 0 and write the values of a, b and c.
6. Express 2x = 5 in the form ax + by + c = 0 and find the values of a, b and c.
7. Write two solutions of 3x + y = 8.
8. If x = –1 and y = 2 is a solution of kx + 3y = 7, find the value k.
9. Solve : 141x + 103y = 217; 103x + 141y = 27.
10. Solve : 55x + 52y = 217; 52x + 55y = 217.
11. Solve : $\frac{5}{y} - \frac{2}{x} = \frac{13}{6}; \frac{36}{x} - \frac{24}{y} = 1.$
12. Solve : $\frac{3}{2x-y} + \frac{8}{x+2y} = 3; \frac{12}{x+2y} - \frac{6}{2x-y} = 1.$
13. Solve : x + y = 18; y + z = 12; z + x = 16.
14. Which of the following is not a linear equation in two variables?
    a. px + qy + c = 0
    b. $ax^2 + bx + c = 0$
    c. 3x + 2y = 5
15. One of the solutions of the linear equation 4x – 3y + 6 = 0 is
    a. (3, 2)
    b. (-3, 2)
    c. (-3, -2)
16. Write the linear equation whose solution is x = -1, y = 1?
17. The point (m, m) always lies on which of the following lines? x - y = 0 or x + y = 2m.
18. How many linear equations in x and y can have a solution as (x = 1, y = 3)?
19. Show that x = 2 and y = 1 satisfy the linear equation 2x + 3y = 7.
20. Write four solutions of 2x + 3y = 8.
21. Draw the graph of the equation 2x – 3y = 12. At what points, the graph of the equation cuts the x-axis and the y-axis?
22. Draw the graph of 9x – 5y + 160 = 0. From the graph find the value of y when x = 5.
23. The following observed values of x and y are thought to satisfy a linear equation. Draw the graph using the values of x and y as given in the above table. At what points the graph of the linear equation cuts the x-axis?

x	6	–6
y	–2	6

24. The taxi fare in a town is Rs.10 for the first kilometre and Rs.6 per km for the subsequent distance. Taking the distance as ‘x’ km and total fare as Rs.y, write a linear equation for this information, what will be the total fare for 15 km?
25. Draw the graph of the equation x – y = 4. From the graph, find the coordinates of the point when the graph line meets the x-axis.
26. Draw the graph x + 2y = 6 and from the graph, find the value of x when y = -3.
27. Solve : $\frac{a}{x} + \frac{b}{y} = m; \frac{b}{x} + \frac{a}{y} = n.$