- 1. Three consecutive vertices of a parallelogram are (-2, -1), (1, 0) and (4, 3), find the fourth vertex.
- 2. For what value of k are the points (8, 1), (k, -4) and (2, -5) collinear?
- 3. The midpoint of the segment joining (a, b) and (-3, 4b) is (2, 3a + 4). Find a and b.
- 4. Coordinates of centroid of \triangle ABC are (1, -1). Vertices of \triangle ABC are A(-5, 3), B(p, -1) and C(6, q). Find p and q.
- 5. In what ratio y-axis divides the line segment joining the points (3,4) and (-2, 1)?
- 6. What are the possible slopes of a line which makes equal angle with both axes?
- 7. Determine x so that slope of line through points (2, 7) and (x, 5) is 2.
- 8. Show that the points (a, 0), (0, b) and (3a, -2b) are collinear.
- 9. Write the equation of a line which cuts off equal intercepts on coordinate axes and passes through (2, 5).
- 10. Find k so that the line 2x + ky 9 = 0 may be perpendicular to 2x + 3y 1 = 0
- 11. Find the acute angle between lines x + y = 0 and y = 0
- 12. Find the angle which $\sqrt{3}x + y + 5 = 0$ makes with positive direction of x-axis.
- 13. If origin is shifted to (2, 3), then what will be the new coordinates of (-1, 2)?
- 14. On shifting the origin to (p, q), the coordinates of point (2, -1) changes to (5, 2). Find p and q.
- 15. If the image of the point (3, 8) in the line px + 3y 7 = 0 is the point (-1, -4), then find the value of p.
- 16. Find the distance of the point (3,2) from the straight line whose slope is 5 and is passing through the point of intersection of lines x + 2y = 5 and x 3y + 5 = 0
- 17. The line 2x 3y = 4 is the perpendicular bisector of the line segment AB. If coordinates of A are (-3, 1) find coordinates of B.
- 18. The points (1, 3) and (5, 1) are two opposite vertices of a rectangle. The other two vertices lie on line y = 2x + c. Find c and remaining two vertices.
- 19. If two sides of a square are along 5x 12y + 26 = 0 and 5x 12y 65 = 0 then find its area.
- 20. Find the equation of a line with slope -1 and whose perpendicular distance from the origin is equal to 5.
- 21. If a vertex of a square is at (1, -1) and one of its side lie along the line 3x 4y 17 = 0 then find the area of the square.
- 22. Find the coordinates of the orthocentre of a triangle whose vertices are (-1, 3)(2, -1) and (0, 0).
- 23. Find the equation of a straight line which passes through the point of intersection of 3x + 4y 1 = 0 and 2x 5y + 7 = 0 and which is perpendicular to 4x 2y + 7 = 0.
- 24. If the image of the point (2, 1) in a line is (4, 3) then find the equation of line.
- 25. Find points on the line x + y + 3 = 0 that are at a distance of $\sqrt{5}$ units from the line x + 2y + 2 = 0.
- 26. Find the equation of a straight line which makes acute angle with positive direction of x-axis, passes through point (-5, 0) and is at a perpendicular distance of 3 units from origin.
- 27. One side of a rectangle lies along the line 4x + 7y + 5 = 0. Two of its vertices are (-3, 1) and (1,1). Find the equation of other three sides.
- 28. If (1,2) and (3, 8) are a pair of opposite vertices of a square, find the equation of the sides and diagonals of the square.
- 29. Find the equations of the straight lines which cut off intercepts on x-axis twice that on y-axis and are at a unit distance from origin.
- 30. Two adjacent sides of a parallelogram are 4x + 5y = 0 and 7x + 2y = 0. If the equation of one of the diagonals is 11x + 7y = 4, find the equation of the other diagonal.
- 31. Find the slope of a line, whose inclination is a) 45° b) 150°
- 32. Find the slope of the line through the points: a) (1, 2) and (4, 2) b) (0, -4) and (-6, 2).
- 33. Determine x, so that 2 is the slope of the line through points (2, 5) and (x, 3).

ANSWERS

3.a = 7, b = 105.3:2 (internally) 1. (1, 2) 2. k = 3 4. p = 2, q = -56. ± 1 9. x + y = 710. - 4/311. pi/4 12. 2pi/3 13.(-3, -1)7.1 14. p = -3, q = -3 15. 1 16. 10/√26 17. (1, -5) 18. c = -4, (2,0), (4, 4) 20. $x + y + 5\sqrt{2} = 0$, $x + y - 5\sqrt{2} = 0$ 21. 4 square units 19. 49 square units. 22. (-4, -3)23. x + 2y = 1 24. x + y - 5 = 025. (1, -4), (-9, 6) 26. 3x - 4y + 15 = 027. 4x + 7y - 11 = 0, 7x - 4y + 25 = 0, 7x - 4y - 3 = 028. x - 2y + 3 = 0, 2x + y - 14 = 0, x - 2y + 13 = 0, 2x + y - 4 = 0, 3x - y - 1 = 0, x + 3y - 17 = 029. x + 2y + 5 = 0, x + 2y - 5 = 030. x = y31 a) 1 b) $- 1/\sqrt{3}$ 32. a) 0 b) – 1