# Ch-7 Coordinate Geometry

1. Find a point on the y-axis equidistant from (-5, 2) and (9, -2).
2. Find the distance between the points $(\frac{-8}{5}, 2)$ and $(\frac{2}{5}, 2)$.
3. In ΔABC, D and E are mid-points of the sides BC and AC respectively. Find the length of DE. Prove that DE = $\frac{1}{2}$AB.
4. Point P (5, -3) is one of the two points of trisection of the line segment joining points A (7, -2) and B (1, -5) near to A. find the coordinates of the other point of trisection.
5. Find the area of quadrilateral ABCD whose vertices are A (1, 0), B (5, 3), C (2, 7), and D ( -2, 4).
6. Points P, Q, R and S divide a line segment joining A (2, 6) and B (7, -4) in five equal parts. Find the coordinates of P and R.
7. Find the relation between x and y, if points (2, 1), (x, y) and (7, 5) are collinear.
8. If A (-2, 4), B (0, 0), and C (4, 2) are the vertices of triangle ABC, then find the length of the median through the vertex A.
9. If points A (4, 3) and B (x, 5) are on the circle with centre O (2, 3), find the value of x.
10. If vertices of a triangle are (1, k), (4, -3), and (-9, 7) and its area is 15 sq. units then find then the value of k.
11. Find the area of ΔABC, whose vertices are A (-5, 7), B (-4, -5), and C (4, 5).
12. If point A (0, 2) is equidistant from the point B (3, p)and C (p, 5), find p.
13. Find the area of the ΔABC with A (1, -4) and mid-points of sides through A being (2, -1) and (0, -1).
14. Find the ratio in which the point P $\left(\frac{3}{4}, \frac{5}{12}\right)$ divides the line segment joining the points A $\left(\frac{1}{2}, \frac{3}{2}\right)$, and B (2, -5).
15. If A (-4, 8), B(-3, -4), C(0, -5), and D(5, 6) are the vertices of a quadrilateral ABCD, find its area.
16. Find the coordinates of the point P dividing the line segment joining the points A (1, 3) and B (4, 6) in the ratio 2 : 1.
17. If the coordinates of one end of a diameter of a circle are (2, 3) and the coordinates of its centre are (-2, 5), then what are the coordinates of the other end of the diameter?
18. Prove that the points (7, 10), (-2, 5), and (3, -4) are the vertices of an isosceles right triangle.
19. Find the ratio in which the y-axis divides the line segment joining the points (-4, -6) and (10, 12). Also find the coordinates of the point of division.
20. If the points A (x, 2), B (-3, -4), and C (7, -5) are collinear, then what is the value of x?
21. If the point A (0, 2) is equidistant from the points B (3, p) and C (p, 5), find P. Also, find the length of AB.
22. The mid-point of segment AB is the point P (0, 4). If the coordinates of B are (-2, 3), then find the coordinates of A.
23. If two vertices of an equilateral triangle are (3, 0) and (6, 0), find the third vertex.
24. Find the point of y-axis which is equidistant from the points (-5, -2) and (3, 2).
25. If two vertices of an equilateral triangle are (3, 0) and (6, 0), find the third vertex.
26. For what value of p, the points (-5, 1), (1, p), and (4, -2) are collinear?

27. The coordinates of A and B are (1, 2) and (2, 3). If P lies on AB then find the coordinates of P such that, $\frac{AP}{PB} = \frac{4}{3}$.
28. Show that the ΔPQR formed by the points P ($\sqrt{2}$, $\sqrt{2}$), Q ($-\sqrt{2}$, $-\sqrt{2}$) and R ($-\sqrt{6}$, $-\sqrt{6}$) is an equilateral triangle.
29. The line joining the points (2, -1) and (5, -6) is bisected at p. If p lies on line 2x + 4y + k = 0, find the value of k.
30. If p (x, y) is any point on the line joining the points A (a, 0) and B (0, b), then show that $\frac{x}{a} + \frac{y}{b} = 1$.
31. Find the area of quadrilateral ABCD whose vertices are A (-4, -2), B (-3, -5), C (3, -2), and D (2, 3).
32. Find the ratio in which point (x, 2) divides the line segment joining points (-3, -4) and (3, 5). Also find the value of x.
33. Find the distance between the points (3, -5) and (2, 6).