Board – CBSE   Class – 10th   Topic – Co-ordinate geometry

1. A line intersects y –axis and x-axis at the points P and Q respectively.

   If (2,- 5) is the midpoint of PQ, then find the coordinates of P and Q respectively.

Ans. **(0,-10) and (4, 0)**

2. Find the ratio in which y-axis divides the line segment joining the points A(5, -6) and B(-l, - 4).

   Also find the coordinates of the point of division.

Ans. **5:1 and (0, -13/3)**

3. If the point C(-l, 2) divides internally the line-segment joining the points A(2, 5) and B(x,y) in the ratio 3 : 4, find the value of $x^2 + y^2$.

Ans. **29**

4. Find the area of a quadrilateral ABCD, the coordinates of whose vertices are A(—3,2), B(5,4), C(7, -6) and D(-5, -4).

Ans. **80 sq units**

5. Find the area of the triangle ABC with A(l, -4) and mid-points of sides through A being (2, - 1) and (0, – 1).

Ans. **12 sq unit**

6. If A(-4,8), B(-3, -4), C(0, – 5) and D(5,6) are the vertices of a quadrilateral ABCD, find its area.

Ans. **72 sq unit**

7. Points A(-l, y) and B(5,7) lie on a circle with centre 0(2, -3y). Find the values ofy. Hence, find the radius of the circle.

Ans. $y = -1 \; or \; 7$

8. If the point P(k – 1, 2) is equidistant from the points A(3, k) and B(k, 5), find the values of k.

Ans. 1 or 5

9. Prove that the diagonals of a rectangle ABCD, with vertices A(2, – 1), B(5, – 1), C(5,6) and D(2,6), are equal and bisect each other.

Ans.

10. Find the value(s) of p for which the points (p + 1, 2p – 2), (p – 1 ,p) and (p -6, 2p – 6) are collinear.

Ans. 4

11. If the distance between the points (4, p) & (1, 0) is 5, then find the value of P

Ans. ±4

12. Point A (1, 2), B (0, 0) and C (a, b) are collinear, find the relation between a and b.

Ans. 2a = b

13. Find the coordinate of the point on x-axis which is equidistant from (2,-5) and (-2, 9).

Ans. (-7,0)

14. Find the coordinates of a point A, where AB is diameter of a circle whose centre is (2, -3) and B is (1, 4)

Ans. (3, -10)

15. Find the centroid of triangle whose vertices are (3, -7), (-8, 6) and (5, 10)

Ans. (0, 3)

16. Point P (5, -3) is one of the two points of trisection of the line segment joining the points A (7, -2) and B (1, -5) near to A. Find the coordinates of the other point of trisection.

Ans. (3, -4)

17. If A (-2, 4), B (0, 0), C (4, 2) are the vertices of a ΔABC, then find the length of median through the vertex A.

Ans. 5 units

18. What is the distance between the point A (c, 0) and B (0, -c)?

Ans. $\sqrt{2}c$

19. Point P divides the line segment joining the points A (2, 1) and B (5,-8) such that AP: AB=1:3.If P lies on the line $2x – y + k = 0$, then find the value of.

Ans. k = –8

20. Points P, Q, R, and S in that order are dividing a line segment joining A (2, 6) and B (7, -4) in five equal parts. Find the coordinates of point P and R?

Ans. [P (3, 4), R (5, 0)]

21. Find a relation between x and y if the points (2, 1), (x, y) and (7, 5) are collinear.

Ans. 4x - 5y + 3 = 0

22. If A (-4, -2), B (-3, -5), C (3, -2) and D (2, 3) are the vertices of a quadrilateral, then find the area of the quadrilateral.

Ans. 28 sq. units

23. Find the point on y- axis which is equidistant from the points (5, -2) and (-3, 2)

Ans. (0, -2)

24. Find the area of the triangle formed by joining the mid points of the sides of the triangle whose vertices are (0, -1), (2, 1) and (0, 3). Find the ratio of this area to the area of the given triangle.

Ans. 1:4

25. Find the area of the quadrilateral whose vertices taken in order are (-4, -2), (-3, -5), (3, -2) and (2, 3)

Ans. 28 sq. units

26. Find the area of the rhombus, if its vertices are (3, 0), (4, 5), (-1, 4) and (-2,-1) taken in order.

Ans. 24 sq. units

27. A (6, 1), B (8, 2), C (9, 4) are the three vertices of a parallelogram ABCD. If E is the Midpoint of DC, then find the area of ΔADE.

Ans. 3/4 sq. units