Coordinate Geometry

<1M>

1.Area of triangle enclosed between the coordinate axes with vertices (6, 0) and (0, 11) is _____

(A) 4 sq units

(B) 5 sq units

(C) 10 sq units

(D) none of these

2.Distance between two points $A(x_1, y_1)$ $B(x_2, y_2)$ is AB =

(A) $\sqrt{(x_1 - y_1)^2 + (x_2 - y_2)^2}$

(B) $\frac{\sqrt{(x_1 - y_1)^2 + (x_2 - y_2)^2}}{}$

(C) $\frac{\sqrt{(x_1 - y_2)^2 + (y_1 - x_2)^2}}{}$

(D) $\frac{\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}}{}$

3.In what ratio is the segment joining the points (5, 1) and (-7, -1) divided by X-axis ?

(A) 1 : 6

(B) 6 : 2

(C) 2 : 6

(D) 1 : 1

4.The coordinates of the points of trisection of a segment joining A(-3, 2) and B(9, 5) is _____

(A) (3, 1), (-5, -4)

(B) (5, 9), (-9, 5)

(C) (2, 3), (4, 5)

(D) (1, 3), (5, 4)

5.If A (3, 1), B(2, 6) and C(-5. 7) are the midpoints of the sides of $\triangle$PQR, the area of the triangle is

(A) 96 sq. units

(B) 24 sq. units

(C) 48 sq. units

(D) 50 sq. units

6.The coordinates of the point P(x, y) which divides the line segment joining $A(x_1, y_1)$ and $B(x_2, y_2)$ internally in the ratio m : n is

(A) $(x, y) = \left(\frac{mx_1 - ny_1}{m + n}, \frac{mx_2 + ny_2}{m + n} \right)$

(B) $(x, y) = \left(\frac{mx_2 + nx_1}{m + n}, \frac{my_2 + ny_1}{m + n} \right)$

(C) $(x, y) = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$

(D) None of these

7.A(-1, 2), B(4, 1) and C(7, 6) are three vertices of the parallelogram ABCD. The coordinates of fourth vertex is.

(A) (7, 2)

(B) (-2, 7)

(C) (7, -2)

(D) (2, 7)

8.Area of quadrilateral formed by the vertices (-1, 7), (-4, -9), (9, -3) and (8, -5)

(A) 28 sq. units

(B) 18 sq. units

(C) 50 sq. units

(D) 25 sq. units

9.Find the equation of line from which points (7,1) and (3,5) are equidistant.

10.The point (9, 2) is at a distance of _____ units from Y-axis.

(A) 2 units

(B) 9 units

(C) 5 units

(D) None of these

11.Find the area of a triangle whose vertices are (3, 8), (-4, 2) and (5, -1).

(A) 35.1 sq unit

(B) 37.5 sq unit

(C) 38 sq unit

(D) 40 sq unit

12.Find the coordinates of centre of circle if the coordinate of end points of its diameter are $P(x_1, y_1)$ and $Q(x_2, y_2)$

13.The point (-3, -2) belongs to Quadrant _____

(A) Q_1

(B) Q_2

(C) Q_3

(D) Q_4

14.The point (1,-3),(13,9),(10,12) and (-2,0) taken in order form the vertices of_____

(A) square

(B) rectangle

(C) rhombus

(D) none

15.Find the distance of a point P(x,y) from origin.

16.Find the relation between x and y if the points (x,y),(1,2) and (7,0) are collinear.

17.X-coordinate is also called as_____

18.Y-coordinate is also called as_____

19.Find the area of the triangle formed by the points A (5, 2), B(4, 7) and C(7, -4).

(A) 10

(B) 6

(C) 2

(D) None of these

20.Find the coordinates of the point of intersection of two distinct lines if both of them pass through the origin.

21.What will be the area of triangle whose vertices are ?
$P(x_1, y_1)$ and $Q(x_2, y_2)$ and $R(x_3, y_3)$

22.The point (2, 5) is at a distance of _____ units from X-axis.

(A) 2 units

(B) 5 units
(C) 3 units
(D) None of these

23.If the distance between points (p, -7),(9, -7) is 15 units, then p is_____
(A) -3 or 7
(B) -7 or 3
(C) - 3 or -7
(D) - 6 or 24

24.The coordinates of the centre of a circle Which is passing through (1, 2),(3, -4) and (5, -6) is
(A) (2, 11)
(B) (11, 2)
(C) (11, -2)
(D) (-2, 11)

25.The ratio by which P(4, 6) divide the join of A(-2, 3) and B (6, 7) is _____
(A) $\dfrac{5}{7}$

(B) $\overline{\dfrac{1}{3}}$

(C) $\dfrac{2}{3}$
(D) None of these

26.Two vertices of triangle are (-1, 4) and (5, 2) and medians intersect at (0, -3). Then the third vertex is
(A) (4, 15)
(B) (3, 15)
(C) (-4, 15)
(D) None of these

27.A(-1, 0), B(3, 1) and C(2, 2) are three vertices of the parallelogram ABCD. The coordinates of fourth vertex is
(A) (-2, -1)
(B) (2, 1)
(C) (2, -1)
(D) (-2, 1)

28.The point of intersection of x and y axes is called
(A) origin
(B) null point
(C) common point
(D) none of these

29.The point on X-axis equidistant from (5, 4) and (-1, 2) is
(A) (3, 0)
(B) (2, 0)
(C) (4, 0)
(D) None of these

30.The coordinates of the centroid of a triangle whose vertices are (-1, 3),(-4, 5) and (8, 13) is _____
(A) (6, 6)
(B) (6, 0)
(C) (1, 7)
(D) None of these

31.The value of K if (-3, 12), (7, 6) and (K, 9) are collinear is

(A) 3

(B) 4

(C) 2

(D) 1

32.The points on X-axis at a distance of 10 units from (11, 8) are

(A) (7, 4) (-16, 5)

(B) (6, -9) (17, -11)

(C) (5, 0) (17, 0)

(D) none of these

33.The area of a $\triangle$ABC with vertices A(x_1, y_1), B(x_2, y_2) and C(x_3, y_3) is

(A) $\frac{1}{2}\left|x_1(y_2 - y_3) + x_2(y_3 - y_1) + x_3(y_1 - y_2)\right|$

(B) $\frac{1}{2}\left|x_1(y_2 - y_3) - x_2(y_3 - y_1) - x_3(y_1 - y_2)\right|$

(C) $\left|x_1(y_2 - y_3) + x_2(y_3 - y_1) + x_3(y_1 - y_2)\right|$

(D) $\frac{1}{2}\left|x_1(y_2 + y_3) - x_2(y_3 + y_1) - x_3(y_1 + y_2)\right|$

34.Distance between two points $P(x_1, y_1)$ and $Q(x_2, y_2)$ will be

35.Two vertices of triangle are (3, -5) and (-7, 4). If its centroid is (2, -1), the third vertex is

(A) (4, 5)

(B) (10, -2)

(C) (-4, 5)

(D) None of these

36.Area of quadrilateral formed by the vertices (1, 1), (7, -3), (12, 2) and (7, 21)

(A) 132 sq. units

(B) 128 sq. units

(C) 150 sq. units

(D) 130 sq. units

37.Is (0,0)the mid point of (0, 1) and (0,-1)?

38.Find the distance between the points P(-6, 7) and Q(-1, -5)

(A) 11

(B) 13

(C) 15

(D) 20

39.The point (0, -2) lies on

(A) +ve X-axis

(B) +ve Y-axis

(C) -ve X-axis

(D) -ve Y-axis

40.The vertices of a triangle are (2, 1), (5, 2) and (3, 4). Find the co-ordinates of the centroid.

(A) $\left(\frac{10}{3}, \frac{7}{3}\right)$

(B) $\left(\dfrac{5}{3}, \dfrac{2}{3}\right)$

(C) $\left(\dfrac{7}{3}, \dfrac{5}{3}\right)$

(D) $\left(\dfrac{7}{3}, \dfrac{-7}{3}\right)$

41. Three vertices of a rectangle are the points (3,4), (-1,2) and (2,-4); what are the co-ordinates of the fourth vertex?

(A) (1, 4)

(B) (3, 2)

(C) (4, -4)

(D) (6, -2)

42. If points $A(x_1, y_1)$, $B(x_2, y_2)$ and $C(x_3, y_3)$ are collinear, then

(A) $\left| x_1(y_2 - y_3) + x_2(y_3 - y_1) + x_3(y_1 - y_2) \right| = 0$

(B) $\left| x_1(y_2 - y_3) - x_2(y_3 - y_1) - x_3(y_1 - y_2) \right| = 0$

(C)

(D) $\left| x_1(y_2 + y_3) - x_2(y_3 + y_1) - x_3(y_1 + y_2) \right| = 0$

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

(A) 0, -7

(B) -7, 0

(C) 7, -7

(D) -7, 7

44. Find the co-ordinates of the point which divides the line joining the points (-1, 7) and (4, -3) in the ratio 2 : 3.

(A) (2, 3)

(B) (3, 3)

(C) (1, 3)

(D) (3, 2)

45. Find the area of the triangle whose vertices are (3, 2), (11, 8) and (8, 12).

(A) 21

(B) 25

(C) 23

(D) None of these

46. Find the distance of the point (6, -6) from the origin.

(A) 2

(B) 6

(C) $6\sqrt{2}$

(D) 0

47. For what value of x will the points (x, 1), (2, 1) and (4, 5) lie on a line?

(A) 1

(B) -1

(C) 2

(D) -2

48.Find the coordinates of the centroid of a triangle whose vertices are (-2, 4), (-5, 6) and (13, 14).
(A) (5, 5)
(B) (7, 0)
(C) (2, 8)
(D) None of these

49.Find the value of K if P(K, 10) is the mid point of AB, where the co-ordinate of A and B are (-4, 13) and (8, 7) respectively.
(A) 3
(B) 4
(C) 2
(D) 1

50.Area of triangle enclosed between the coordinate axes with vertices (5, 0) and (0, 8) is _____
(A) 3 sq units
(B) 5 sq units
(C) 8 sq units
(D) None of these

51.Determine if the points (1, 5), (2, 3) and (-2, -11) are collinear.
(A) collinear
(B) non collinear
(C) Both of these
(D) None of these

52.If the distance between points (a, -5),(7, -5) is 12 units, then find the value of a.
(A) -5 or 5
(B) -5 or 4
(C) -4 or -5
(D) -5 or 19

53.
Find the value of x, if the distance between the points (x, -1) and (3, 2) is 5.
(A) 0, -1
(B) 1, 1
(C) 7, 1
(D) 7, -1

54.Find the mid-point of the line joining (-3, -6) and (1, -2).
 (A) (1, -3)
(B) (-3, -1)
(C) (1, -4)
(D) (-1, -4)

<2M>
55.Do the points (3, 2), (-2, -3) and (2, 3) form a triangle? If so, name the type of triangle formed.

56.Show that the points (1, 7), (4, 2), (-1, -1) and (- 4, 4) are the vertices of a square.

57.Find a relation between x and y such that the point (x , y) is equidistant from the points (7, 1) and (3, 5).

58.
Find a point on the y-axis which is equidistant from the points A(6, 5) and B(- 4, 3).

59.Find the coordinates of the point which divides the line segment joining the points (4, - 3) and (8, 5) in the ratio 3 : 1 internally.

<3M>
60.If the points A(6, 1), B(8, 2), C(9, 4) and D(p, 3) are the vertices of a parallelogram, taken in order, find the value of p .

61.If A(-5, 7), B(- 4, -5), C(-1, -6) and D(4, 5) are the vertices of a quadrilateral, find the area of the quadrilateral ABCD.

62.Find the value of k if the points A(2, 3), B(4, k) and C(6, -3) are collinear.

63.Find the area of a triangle formed by the points A(5, 2), B(4, 7) and C (7, - 4).

64.In what ratio does the point (- 4, 6) divide the line segment joining the points A(- 6, 10) and B(3, - 8)?

<6M>
65.If A(5, -1), B(-3, -2) and C(-1, 8) are the vertices of triangle ABC, find the length of median through A and the coordinates of the centroid.

66.Prove that the points (-3, 0), (1, -3) and (4,1) are the vertices of an isosceles right angled triangle. Find the area of this triangle.

67.Prove that the co-ordinate of the centroid of the triangle whose vertices are

$(x_1,y_1),(x_2,y_2),$ and (x_3,y_3) are $\left(\dfrac{x_1+x_2+x_3}{3}, \dfrac{y_1+y_2+y_3}{3} \right)$

Also deduce that the medians are concurrent.

68.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 the area of the triangle formed to the area of the given triangle.

69.Find the coordinates of the points of trisection of the line segment joining the points A(2, - 2) and B(-7, 4).