

7. CO-ORDINATE GEOMETRY

MARCH -2015

1. Find the centroid of a triangle, whose vertices are $(3,4)$, $(-7,2)$ and $(10,-5)$
2. Show that the points $A(4,2)$, $B(7,5)$ and $C(9,7)$ are collinear.
3. Name the shape of the quadrilateral formed by joining the points.
 $A(-1,-2)$, $B(1,0)$, $C(-1,2)$ and $D(-3,0)$ on a graph paper. justify your answer.

June-2015

4. Find the distance between the points $(0,0)$ and (a,b)
5. $A(3,6)$, $B(3,2)$ and $C(8,2)$ are the vertices of a rectangle ABCD. Plot these points on a graph paper. From this find the coordinates of vertex D, so that ABCD will be a rectangle.
6. if $A(-5,7)$, $B(-4,-5)$, $C(-1,-6)$ and $D(4,5)$ are the vertices of a quadrilateral then find the area of the quadrilateral ABCD.
7. the area of triangle whose vertices are $(0,0)$, $(3,0)$ and $(0,4)$ is....
A) 3 sq. units B) 4 sq. units C) 6 sq. units D) 5 sq. units

March -2016

8. Find the mid point of the line segment joining the points $(5,-5)$ and $(5,-5)$
9. Show that the points $A(-3,3)$, $B(0,0)$ and $C(3,-3)$ are collinear.
10. Find the coordinates of the points of trisection of the line segment joining the points $(-3,3)$ and $(3,-3)$
11. Slope of the line passing through $(-1,-1)$ and $(1,1)$ is....
A) -1 B) 0 C) 3 D) 10

June -2016

12. If the slope of the line passing through the two points $(2,5)$ and $(5,8)$ is represented by $\tan \theta$ (where $0^\circ < \theta < 90^\circ$) in trigonometry then find angle ' θ '.
13. If the distance between the two points $(8,x)$ and $(x,8)$ is $2\sqrt{2}$ units then find the value of ' x '
14. If the points $P(-3,9)$, $Q(a,b)$ and $R(4,-5)$ are collinear and $a + b = 1$, then find the values of a and b .

MARCH- 2017

15. $A = (0,3)$, $B(k,0)$ and $AB = 5$. find the positive value of k .
16. Two vertices of a triangle are $(3,2)$ and $(-2,1)$ and its centroid $(\frac{5}{3}, \frac{-1}{3})$. find the third vertex of the triangle.
17. The points C and D are on the line segment joining $A(-4,7)$ and $B(5,13)$ such that $AC=CD=DB$. Then find coordinates of points C and D.
18. (x,y) $(2,0)$, $(3,2)$ and $(1,2)$ are vertices of a parallelogram, then $(x,y) = \dots$
A) $(0,0)$ B) $4,8$ C) $(1,0)$ D) $(5,0)$

March - 2018

19. Find the distance between the points $(1,5)$ and $(5,8)$
20. In the diagram on a lunar eclipse, if the positions sun, Earth and Moon are shown by $(-4,6)$, $(k,-2)$ and $(5,-6)$ respectively, then find the value of k .
21. Find the points of trisection of the line segment joining the points $(-2,1)$ and $(7,4)$ (4 Marks)

June - 2017

22. Determine ' x ' if the slope of the line joining the two points $(4,x)$ and $(7,2)$ is $\frac{8}{3}$
23. The area of triangle is 18 sq. units, whose vertices are $(3,4)$, $(-3,-2)$ and $(p,-1)$; then find the value of p .

June 2018

24. What is the other end of the diameter of the circle, whose center is $(1,2)$ and one end point of the diameter is $(3,4)$
25. Find the coordinates of point which divides the segment joining $(2,3)$ and $(-4,0)$ in 1:2
26. show that the points $A(-1,-2)$, $B(4,3)$, $C(2,5)$ and $D(-3,0)$ in that order form a rectangle.

March, June - 2019

1. Find the centroid of a ΔPQR , when vertices are $P(1,1)$, $Q(2,2)$, $R(-3,-3)$. (M'19)
2. Determine ' x ' so that 2 is the slope of the line passing through $A(-2,4)$ and $B(x,-2)$. (J'19)
3. Akhila says, "points $A(1,3)$, $B(2,2)$, $C(5,1)$ are collinear". Do you agree with Akhila? Why?
4. Find the ratio in which X-axis divides the line segment joining the points $(2,-3)$ and $(5,6)$.
Then find the intersecting point on X-axis. (M'19).
5. Find the area of the Rhombus ABCD, whose vertices are taken in order, are $A(-1,1)$, $B(1,-2)$, $C(3,1)$, $D(1,4)$. (J'19)

Practice Problems

1. What is the distance between $A(4,0)$ and $B(-4,0)$?
2. What is the distance between $A(7, -2)$ and $B(-2,10)$?
3. Find the distance between the points origin and $A(-3, -7)$?
4. Find the distance between $A(2, -5)$ and $B(-1,4)$?
5. Find the distance between $A(3,2)$ and $B(5, -3)$?
6. Find the midpoint of line segment joining the points $(-7,3)$ and $(-1, -4)$?
7. Find the centroid of the triangle whose vertices are $(2, -5)$, $(-8,4)$, and $(0, -2)$?
8. The points $(2,3)$, (x,y) and $(3, -2)$ are vertices of a triangle. If the centroid of this triangle is again (x,y) , find (x,y) ?
9. The end points of line are $(-1,3)$ and $(4,6)$. Find the slope of the line ?
10. Find the slope of the line AB with $A(-2, -5)$ and $B(-7,2)$?

2 MARKS QUESTIONS

11. Find the distance between $A(-5,3)$ and $B(-2,1)$?
12. Find the point on x - axis which is equidistant from $(2, -5)$ and $(-2,9)$?
13. If the distance between two points $(x,7)$ and $(1,15)$ is 10. Find x ?
14. Find the radius of the circle whose Centre is $(3,2)$ and passes through $(-5,6)$?
15. 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?
16. In what ratio does the point $(-4,6)$ divide the line segment joining the points $A(-6,10)$ and $B(3,-8)$?
17. Find the ratio in which the y -axis divide the line segment joining the points $(5,-6)$ and $(1,-4)$. Also find the point of trisection.?
18. Find the area of triangle whose vertices are $(1,-1)$, $(-4,6)$ and $(-3,-5)$.?
19. Find the area of triangle formed by the points $A(5,2)$, $B(4,7)$ and $C(7,-4)$.?
20. The points $(3,-2)$, $(-2,8)$ and $(0,4)$ are three points in a plane. Show that these points are collinear ?
21. Verify the points $(1,5)$, $(2,3)$ and $(-2, -1)$ are collinear or not ?
22. Find the value of b for the points $(1,2)$, $(-1, b)$ and $(-3, -4)$ are collinear ?
23. Determine the x so that 2 is the slope of the line through $P(2,5)$ and $Q(x, 3)$?

4 MARKS QUESTIONS

24. Show that the points $A(4,2)$, $B(7,5)$, $C(9,7)$ are lie on a same plane?
25. Show that the points $(1,7)$, $(4,2)$, $(-1,1)$ and $(-4,4)$ are vertices of square ?
26. Find a relation between x and y such that the point (x,y) is equidistant from the points $(7,1)$ and $(3,5)$?
27. Find a point on the y - axis which is equidistant from the points $A(6,5)$ and $B(-4,3)$?
28. Show that the points $A(a, 0)$, $B(-a, 0)$, $C(0, a\sqrt{3})$ are form an equilateral triangle?
29. Show that the points $(-4, -7)$, $(-1,2)$, $(8,5)$ and $(5, -4)$ are vertices of rhombus. ?
30. Find the coordinates of the points of trisection of the line segment joining the points $A(2, -2)$ and $B(-7,4)$?
31. Find the coordinates of the points of trisection of the line segment joining the points $A(2,6)$ and $B(-4,8)$?
32. Show that the points $(7,3)$, $(6,1)$, $(8,2)$ and $(9,4)$ are vertices of parallelogram. ?
33. If the points $A(6,1)$, $B(8,2)$, $C(9,4)$ and $D(p, 3)$ are the vertices of a parallelogram, find p ?
34. If $A(-5,7)$, $B(-4, -5)$, $C(-1, -6)$ and $D(4,5)$ are the vertices of a quadrilateral, then find the area of quadrilateral $ABCD$?
35. Find the area of a triangle whose lengths of sides are 15m, 17m, 21m, use Heron's formula and verify your answer by using the formula $A = \frac{1}{2}bh$?
36. Find the area of a triangle formed by the points $(0,0)$, $(4,0)$, $(4,3)$ by using Heron's formula ?
37. Find the area of a triangle formed by joining midpoints 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.?
38. Find the area of quadrilateral whose vertices are $(-4, -2)$, $(-3, -5)$, $(3, -2)$ and $(2,3)$?
Find the area of a triangle formed by the points $(2,3)$, $(-1,3)$, $(2, -1)$ by using Heron's formula