CO-ORDINATE GEOMETRY
PRE & PRA QUESTIONS

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

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

3. If the coordinates of the mid-points of the line joining the points (3a, 4) and (–2, 2b) are (5, a), then a and b are

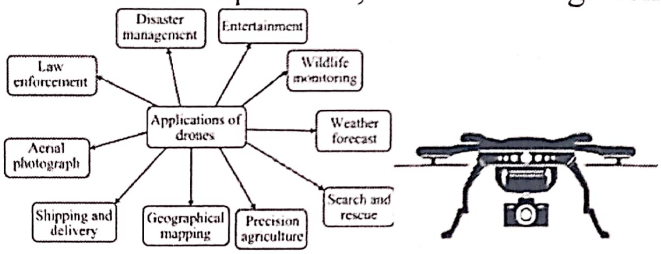
4. The coordinates of a point on the x-axis, which is equidistant from (–2, 5) and (2, –3) are :

5. The distance of (–4, 7) from y-axis is :

6. The coordinates of the mid-point of a line segment joining the points A(3, –1) and B(7, 5) are (5a, 2b). The value of (a + b) is :

7. Assertion (A) : The distance of the point (– 3, 5) from the x-axis is 3 units.
   Reason (R) : Abscissa of a point gives the distance of the point from the y-axis.

8. Drones are used by military for surveillance purposes. These days, drones are also used by individual entrepreneurs, SMEs and large companies to accomplish various other tasks.



A drone is flying over a rectangular field with vertices at A(–100, 0), B(100, 0), C(100, 150) and D(–100, 150). The drone captures an image at a location (x, y).
Based on the above information, answer the following questions :
(i) Find the dimensions of the rectangular field.
(ii) Find the distance between points A and C.
(iii) (a) If a drone captures the image of an object P(x, y) on the rectangular field, find the relation between x and y such that PA = PC. OR
(b) If a drone captures the image of an object at a point Q whose x coordinate is 0 and it is equidistant from points A and D, find the coordinates of Q.

9. The centre of a circle is at (2, – 3). If one end point of the diameter AB is A(3, – 10), then the coordinates of B are :

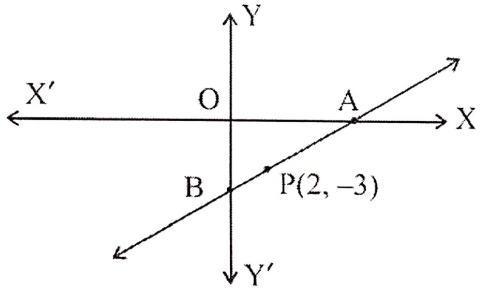
10. The mid-point of the line segment joining the points (–1, 3) and (8, 3/ 2) is :

11.The distances the points (2,-3) and (-2,3) is

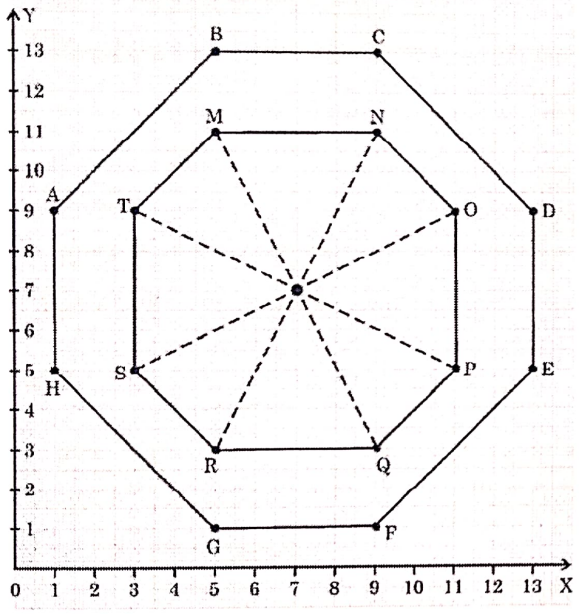
12.The diameter of a circle is of length 6 cm . If one end of the diameter is (−4,0), the other end on x-axis is at :

13. Find the co-ordinates of the points of trisection of the line segment joining the points (−2,2) and (7,−4).

14. The line AB intersects x axis at A and y axis at B. The point P(2.3) lies on AB such that AP: PB = 3:1 . Find the coordinate of A and B.



15. The top of a table is hexagonal in shape.



On the basis of the information given above, answer the following questions:
(i) Write the coordinates of A and B.
(ii) Write the coordinates of the mid-point of line segment joining C and D.
(iii) (a) Find the distance between M and Q.
OR (iii) (b) Find the coordinates of the point which divides the line segment joining M and N in the ratio1:3 internally.

16. The distance of the point(5,4) from the origin is

17. Find the ratio in which the Y-axis divides the line segment joining the points A(5, –6) and B(–1, –4). Also, find the point of intersection.

18. If Q(0, 2) is equidistant from P(5, –3) and R(x, 7), find the value(s) of x.

19. If A(1, 1) and B(7, 9) are the end points of a diameter of a circle, then find the co-ordinates of the centre of the circle.

20. Assertion (A) : The distance of P(a, b) from origin is $a^2 + b^2$.
Reason (R) : The distance between two points A(x1, y1) and B(x2, y2) is root over of $(x2 - x1)^2 + (y2 - y1)^2$.

21. The distance between the points A(–1, 5) and B(6, –2) is :

22. The distance between the points A(5,–4) and B(4,–5) is

23. Find a point which is equidistant from the points A(–1, 5) and B(2, 1). How many such points are there?

24. If the distances of the point P(x, y) from (1, 0) and (0, 1) are equal, then which of the following is true ?

25. Point P(x, y) divides the line segment joining the points A(–1, 3) and B(9, 8) such that AP : PB = k : 1. If the co-ordinates of P are such that x = y, then find the value of k.

26. If C(1, –1) is the mid-point of the line segment AB joining points A(4, x) and B(– 2, 4), then value of x is :

27. What should be the condition for the position of four points , so that the four points A, B, C and D form a parallelogram ABCD.

28. The midpoint of the line segment joining the points (– 6, – 4) and (0, 4) is :

29. Find the ratio in which the point (3, y), divides the line segment joining the points (– 2, – 5) and (6, 3). Also, find the value of y.

30. Find the ratio in which the point (3, y), divides the line segment joining the points (– 2, – 5) and (6, 3). Also, find the value of y.

31. Find the coordinates of the points of trisection of the line segment joining the points A(5, – 3) and B(– 4, 3).

32. Find the centre and radius of a circle having end points of its diameter as (3, 10) and (1, 4).

33. Find the ratio in which a line segment joining points (1, 4) and (6, 5) is divided by the x-axis.

34. The distance between the points (c, 0) and (0, -c) is :

35. Distance of point P(4, 3) from origin is : (a) 4 units (b) 3 units (c) 5 units (d) -5 units

36. Find the positive value of y for which the distance between the points A(3,-1) and B(11,y) is 10 unit.

37. Find a relation between x and y such that the point P(x, y) is equidistance from the points A(0,3) and B (-2,1).

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

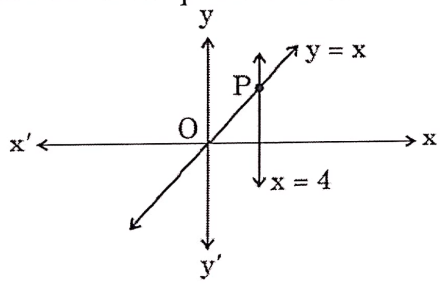
39. If Q(0,1) is equidistant from P(5,−3) and R(x,6), then find the values of x. Also, find the distance QR and PR.

40. Prove that the points A(-1, 0), B(3, 1), C(2, 2) and D(-2, 1) are the vertices of a parallelogram ABCD. Is it also a rectangle ?

41. The vertices of a triangle are (-2, 0), (2, 3) and (1, -3). Is the triangle equilateral, isosceles or scalene ?

42. Find the value of x such that PQ=QR where the coordinates of P,Q and R are (6,−1),(1,3) and (x,8) respectively.

43. The lines represented by the linear equations y = x and x = 4 intersect at P. The coordinates of the point P are :



44. In what ratio does x-axis divide the line segment joining the points A(2, 3) and B(5, 6) ?

45. If Q(0,1) is equidistant from P(5,−3) and R(x,6), find the values of x.

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

47. The x-coordinate of a point P is twice its y-coordinate. If P is equidistant from the points Q(2,−5) and R(−3,6), then find the coordinates of P. Hint. The point P is of the form ($2k$,k).

48. If the points A(4,3) and B(x,5) are on a circle with centre C(2,3), find the value of x. Hint. AC=BC.

49. If a point A(0,2) is equidistant from the points B(3,p) and C(p,5), then find the value of p.

50. Using distance formula, show that (3,3) is the centre of the circle passing through the points (6,2),(0,4) and (4,6).

51. Using distance formula, show that the points A(3,1),B(6,4) and C(8,6) are collinear.

52. y-axis divides the line segment joining the points (-6, 2) and (2, -6) in the ratio :

53. Show that the points A(-3, 2), B(-5, -5), C(2, -3) and D(4, 4) are vertices of a rhombus ABCD. Is it also a square ?

54. If the points A (2, 3), B (−5, 6), C (6, 7) and D (p, 4) are the vertices of a parallelogram ABCD, find the value of p.

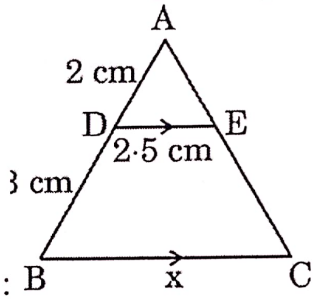
55. Show that A(1, 2), B(5, 4), C(3, 8) and D(-1, 6) are vertices of a parallelogram ABCD.

56. Show that the points A(3, 0), B(6, 4) and C(-1, 3) are vertices of a right-angled triangle.

57. Determine the ratio in which the point P(a, -2) divides the line segment joining the points A(-4, 3) and B(2, -4). Also, find the value of a.

58. In the given figure, in tri ABC points D and E are mid-points of sides BC and AC respectively. If given vertices are A(4, -2), B(2, -2) and C(-6, -7), then verify the result DE = 1/2 AB.

59. In the given figure, AD = 2 cm, DB = 3 cm, DE = 2·5 cm and DE BC. The value of x is :



60. If A and B are (−2,−2) and (2,−4) , respectively, find the coordinates of P such that AP/AB=3/7 and P lies on the line segment AB .

61. In what ratio X-axis divides the join of (3,6)(-12,-3). Find the point as well.

62. If (−5,3) and (5,3) are two vertices of an equilateral triangle then Find coordinates of 3 rd vertex. given that origin lies inside the triangle

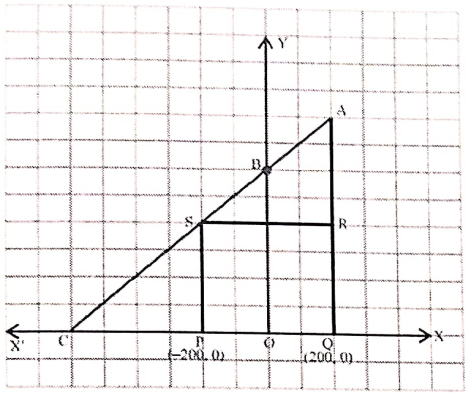
63. If the centre of a circle is (2a,a−7), then Find the values of a, if the circle passes through the point (11,−9) and has diameter 10 root 2 units.

64. Show that the points (-2, 3), (8, 3) and (6, 7) are the vertices of a right-angled triangle.

65. The coordinates of the vertex A of a rectangle ABCD whose three vertices are given as B(0, 0), C(3, 0) and D(0, 4) are :

66. The distance of the point (–1, 7) from x-axis is

67. Based on the above information, answer the following questions :



(i) Taking O as origin, coordinates of P are (–200, 0) and of Q are (200, 0). PQRS being a square, what are the coordinates of R and S ?
(ii) (a) What is the area of square PQRS ? OR (b) What is the length of diagonal PR in square PQRS ?
(iii) If S divides CA in the ratio K:1, what is the value of K, where point A is (200, 800) ?

68. The points (– 4, 0), (4, 0) and (0, 3) are the vertices of a :
(a) right triangle (b) isosceles triangle (c) equilateral triangle (d) scalene triangle

68. Point P(x, y) is equidistant from points A(5, 1) and B(1, 5). Prove that x = y.

69. Find the ratio in which y-axis divides the line segment joining the points (5, 6) and (1, 4).

70. Find the ratio in which line y = x divides the line segment joining the points (6, 3) and (1, 6).

71. A line intersects the y-axis and x-axis at P and Q , respectively. If (2,-5) is the mid-point of PQ, then the coordinates of P and Q are, respectively

72. A line intersects the y-axis and x-axis at P and Q , respectively. If (2,5) is the mid-point of PQ, then the coordinates of P and Q are, respectively

73. Find the ratio in which the line segment joining the points A(6, 3) and B(-2, -5) is divided by the x-axis. Also, find the coordinates of this point on the x-axis.

74. Find the points on the x-axis, each of which is at a distance of 10 units from the point A(11,–8).

75. Find the ratio in which the line segment joining the points A(5,-6) and B(-1, -4) is divided by the y-axis. Also, find the coordinates of this point on the y-axis.

76. Show that the points A(2, 3), B(7, 8), C(10, 5) and D(5, 0) respectively form a rectangle.

78. The point which lies on the perpendicular bisector of the line segment joining the points A(-3, -4) and B(3, 4) is :

79. The point P on y-axis equidistant from the points (-2, 7) and (3, 6) is :

80. Show that the points (-3, -3), (3, 3) and ($-3\sqrt{3}$, $3\sqrt{3}$) are the vertices of an equilateral triangle.

81. Prove that A(4, 3), B(6, 4), C(5, 6), D(3, 5) are the vertices of a square ABCD.

82. The coordinates of the point A, where AB is the diameter of the circle whose centre is (3, 2) and B (7, 4) is :

83. Find the ratio in which the point (1, k) divides the line segment joining the points (3, 10) and (6, 8). Hence, find the value of k.

84. If A(2, 1), B(a, 0), C(4, b) and D(1, 2) are the vertices of a parallelogram ABCD, then find the values of a and b.

85. The three vertices of a parallelogram ABCD, taken in order, are A(1, 0), B(3, 1) and C(2, 2). Find the coordinates of the fourth vertex D.

86. If AB is a chord of a circle with centre at O(2, 3), where the coordinates of A and B are (4, 3) and (x, 5) respectively, then the value of x is :

87. Find the ratio in which the point (-1, k) divides the line segment joining the points (-3, 10) and (6, -8). Hence, find the value of k.

88. Show that the four points A(0, -1), B(6, 7), C(-2, 3) and D(8, 3) are the vertices of a rectangle ABCD.

89. Show that the points A(6, 4), B(5, -2) and C(7, -2) are the vertices of an isosceles triangle. Also, find the length of the median through point A.

90. The perpendicular bisector of the line segment joining the points A(–1, 3) and B(2, 4) cuts the y-axis at :

91. The vertices of a quadrilateral ABCD are A(6, – 2), B(9, 2), C(5, – 1) and D(2, – 5). Prove that ABCD is a rhombus, and not a square.

92. AD is a median of $\triangle ABC$ with vertices A(5,–6),B(6,4) and C(0,0). Length AD is equal to

93. If the distance between the points (3,–5) and (x,–5) is 15 units, then the values of x are:

94. The centre of a circle is at (2, 0). If one end of a diameter is at (6, 0), then the other end is at:

95. ABCD is a rectangle formed by the points A(-1, -1) B(-1, 6) C(3, 6)and D(3,-1) P Q R and S are midpoint of AB, BC CD and DA respectively.
Find the coordinates of P, Q, R, S. Show that diagonals of quadrilateral pqrs bisect each other

96. A(3, 0), B(6, 4) and C(–1, 3) are vertices of a triangle ABC. Find lengthofitsmedianBE.

97. Find the type of triangle ABC formed whose vertices are A(1,0), B(–5,0) and C(–2,5).

98. XOYZ is a rectangle with vertices X(–3,0), O(0,0), Y(0,4) and Z(x,y).The length of its Each diagonalis

99. Points A(–1,y) and B(5, 7) lie on a circle with centre O(2,-3y) such that AB is a diameter Of the circle.Find the value of y.Also,find the radius of the circle.

100. P(–2,5) and Q(3,2) are two points.Find the coordinates of the point R on line segment PQ such that PR = 2QR.

101. Find the length of the median AD of tri ABC having vertices A(0,–1), B(2,1) and C(0,3).

102. Find the coordinates of the points which divide the line segment joining A (– 2, 2) and B (2, 8) into four equal parts.

103. The points (– 2, – 2), (6, – 2) and (2, 1) are the vertices of :
(A) a right angled triangle (B) an isosceles triangle (C) an isosceles right triangle
(D) a scalene triangle

104. The point on x-axis which is equidistant from the points (5, –3) and (4, 2) is :

105. The ratio in which the line segment joining the points A(– 2, – 3) and B(3, 7) is intersected internally by the y-axis is :