MATHS

BOOKS - KALYANI MATHS (ASSAMESE ENGLISH)

CO-ORDINATE GEOMETRY

Exercise

1. Find the distance between following pair of points: (2, 4), (2, 2)

2. Find the distance between following pair of

points: (-1, -2), (4, 6)

3. Find the distance between following pair of

points: $(3, 6)$, $\left(3 + \sqrt{3}, 7\right)$

4. Find the distance between following pair of points: (-7, 4), (5, -1)

5. Find the distance between following pair of points: $(a \cos \theta, a \sin \theta)$, (0, 0)

6. If the distance between the point (C, 2) and (3, 4) is 2 cm find the value of C.

7. If the distance between (3, 5) and (k, 8) is 5. Find k.

8. Prove that the following points are the vertices of an isosceles right angled triangle.

(0, 4), (4, 1), (7, 5)

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9. Prove that the following points are the vertices of an isosceles right angled triangle.

(3, 1), (9, 7), (-3, 7)

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10. Prove that the following points are the vertices of an isosceles right angled triangle.

(3, 0), (6, 4), (-1, 3)

11. Show that the triangle whose vertices are (1, 4), (-5, 1) and (1, -2) is isosceles.

12. Prove that the triangle whose vertices are (-2, 2) (1, -2) and (9, 4) is a right angled triangle.

13. The vertices of a triangle are (a, 0), (-a, 0) and $\left(0, \sqrt{3a}\right)$. Show that the triangle is equilateral.

14. If the points (p, q) and (q, p) are equidistant from the point (x, y). show that x = y.

15. Under what condition the points (3, - 4) and (-5, 2) are equidistant from the point (x, y).

16. Prove that the point (-2, -11) is equidistant from the points (-3, 7) and (4, 6).

17. If the square of the distance between the points (5, 10) and (10, y) be 50. Find y.

18. One extremity of a straight line 10 cm long is (-3, 2). If the ordinate of the other extremity be 10, find its obscissa.

19. If the extremities of a circle be (-5, 7) and (3, -11), find the centre of the circle.

20. Find the coordinate of a point equidistant from the given points A(2, 1), B(1, 2) and C(8, 9).

21. Find the co-ordinate of a point equidistant from the given point A(1, 0), B(0, 1) and C(2, 1).

22. Prove that the points (-1, 0), (3, 1), (2, 2), (-2, 1) are the vertices of a parallelogram.

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23. Prove that the points (- 1, 0), (0, 3), (1, 3) and (0, 0) are the vertices of a parallelogram.

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24. Prove that the points (-2, –1), (1, 0), (4, 3), (1,2) are not the vertices of a rectangle.

25. Prove that the points (a, b), (a, -b), (-a, b) and (-a, -b) are the vertices of a rectangle.

26. Show that the quadrilateral with the vertices (3, 2), (0, 5), (-3, 2), (0, -1) is a square.

27. Show that the quadrilateral with the vertices (0, 0), (a, 0), (a, a), (0, a) is a square.

28. Show that the quadrilateral with the vertices (7, 3), (3, 0), (0, -4), (4, -1) is a rhombus.

29. Prove that (3, 4), (4, 2), (5, 4) and (4, 6) are the vertices of a rhombus.

30. If the co-ordinates of the points P, Q, S are $(at^2, 2at)$, $\left(\dfrac{a}{t^2}, \dfrac{2a}{t}\right)$ and (a, 0) respectively, prove that $\dfrac{1}{SP} + \dfrac{1}{SQ}$ is constant.

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31. If D is the middle point of the side BC of the triangle ABC, prove that $AB^2 + AC^2 = 2(AD^2 + DC^2)$.

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32. find the co-ordinates of the middle points of the line segment joining the pair of points given below:

(-3,2), (5,2)

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33. find the co-ordinates of the middle points of the line segment joining the pair of points given below:

(2,3), (3,4)

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34. find the co-ordinates of the middle points of the line segment joining the pair of points given below:

(3,1),(-5,7)

35. the end points of a line and the ratio in which it is divided by a point are given below.

find the co-ordinates of the point:

(2,3),(5,-3),1:2

36. the end points of a line and the ratio in which it is divided by a point are given below. find the co-ordinates of the point:

(4,5),(7,-1),1:2

37. the end points of a line and the ratio in which it is divided by a point are given below. find the co-ordinates of the point:

(-3,-4),(-8,7),7:5

38. the end points of a line and the ratio in which it is divided by a point are given below. find the co-ordinates of the point:

(1,3),(2,7),3:4

39. if(2, P) is the mid-point of the line segment joining to the point A(6,-5) and B(-2,11), find the value of P.

40. if (x,3) is the mid-point of the line segment joining the points A(6,4) and B(-4,2),find the value of x

41. in what ratio does the point P(2,5) divide the line joining the points A(-8,9) and B(-6,9).

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42. find the ratio in which the point P(-6,a) divides the joint of A(-5,-4) and B(-2,3). Also find the value of a.

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43. find the ratio in which the point(-3, k) divides the join of A(-5,-4) and B(-2,3) .Also find the value of k.

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44. in what ratio the x-axis divides the line segment joining pair of points A(2,-4),B(-3,6).

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45. in what ratio the x-axis divides the line segment joining pair of points A(4,6),B(5,-3).

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46. in what ratio the x-axis divides the line segment joining pair of points A(3,-3),(5,9).

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47. in what ratio the y axis divides the line segment joining pair of points.

A(-3,5),B(4,6)

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48. in what ratio the y axis divides the line segment joining pair of points.

A(2,7),B(-3,4)

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49. in what ratio the y axis divides the line segment joining pair of points

A(2,2),B(4,5)

50. the extremities of a line segment AB are given below . find the co-ordinates of the points of trisections

A(1,2),B(-3,4).

51. the extremities of a line segment AB are given below . find the co-ordinates of the points of trisections

A(2,3),B(6,5).

52. let A(1,3) and B(2,7) be two points.

in what ratio does the line $3x + y = 9$ divides the line segment AB

53. let A(1,3) and B(2,7) be two points.

point P divides the line segment joining the

point A(-1,3) and B(9,8) such that 'AP/BP=k/1'. if

P lies on the line x- y + 2=0 find the value of k.

54. point P divides the line segment joining

the point A(2,1) and B(5,-8) such that

'AP/AB=1/3' .if P lies on the line 2 x-y + k =0find

the value of k.

55. If three vertices of a parallellogram ABCD are A(2,3),B(-1,4), C(5,-2) find the co-ordinates of the fourth vertex D

56. if two adjacent vertices of the parallelogram (3,2) and (-1,0) and the

diagonals meet at(2,-5) .find the other vertices of the parallelogram.

57. if a vertex of a triangle be(1,1) and the middle point of the sides through this point are(-2,3) and (5,2) , find the other vertices

58. the three consecutive vertices of a rhombus are (2,-1),(3,4) and (-2,3) respectively.Find the fourth vertex.