MATHS

BOOKS - KALYANI MATHS (ASSAMESE ENGLISH)

Co-ordinate Geometry

Exercise

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

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2. Find the distance between following pair of points: (-1, -2), (4, 6)

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3. Find the distance between following pair of points: (3, 6), $\left(3+\sqrt{3}, 7\right)$

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

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

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

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

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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)

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

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

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

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

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

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

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

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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.

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

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

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

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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.

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

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

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

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

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

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

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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

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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

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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

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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

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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.


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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


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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)

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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).

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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).

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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

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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.

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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.

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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

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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.

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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

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

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