MATHS

BOOKS - CAMBRIDGE MATHS (KANNADA ENGLISH)

CO-ORDINATE GEOMETRY

Exercise 7 1

1. Find the distance between the following paires of points :

(i) (2, 3), (4, 1)

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

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2. Find the distance between the points (0, 0) and (36, 15).

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3. Determine if the points (1, 5), (2, 3) and (-2, -11) are collinear.

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4. Check whether (5, -2), (6, 4) and (7, 2) aare the vertices of as isoceles triangle.

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5. In a classroom, 4 friends are seated at the points A. B. C and D as shown in Fig. 7.8. Champa and Chameli walk into the class and after observing for a few minutes Champa asks Chameli, "Don't you think ABCD is a square?" Chameli disagrees. Usi

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6. Name the quadrilateral formed, if any, by the following points, and give reasons for your answers:

$A(-1, -2), B(1, 0), C(-1, 2), D(-3, 0)$

(ii)

$A(-3, 5), B(3, 1), C(0, 3), D(-1, -4)$

(iii) $A(4, 5), B(7, 6), C(4, 3), D(1, 2)$

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

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8. Find the values of y for which the distance between the points P(2, -3) and Q(10, y) is 10 units.

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

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10. Find a relation between x and y such that the point (x, y) is equidistant from the point (3, 6) and (-3, 4).

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Exercise 7 2

1. Find the corrdinates of the point which divides the join of (-1, 7) and (4, -3) into the ratio 2 : 3 internally.

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2. Find the coordinates of the points of trisection of the line segment joining (4, -1) and (-2, -3).

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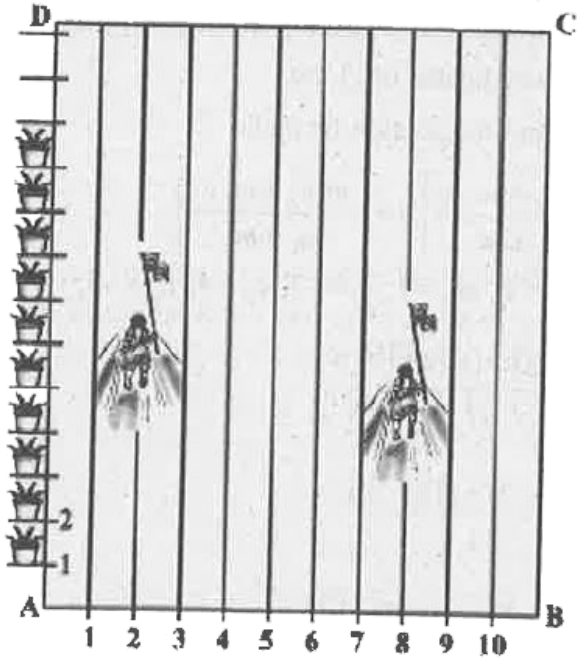
3. To conduct Sports Daty activities, in your rectangular shaped school ground ABCD, lines have been drawn with chalk powder at a distance of 1 m each. 100 flower pots have been placed at a distance of 1 m from each other along AD, as shown in Fig Niharika runs $th\frac{1}{5}$ the distance AD on the 2nd line and posts a green flag. Preet runs tthe

distance AD on the eighth line and posts a red flag. What is the distance between both the flags? If Rashmi has to post a blue flag exactly halfway between the line segment joining the two flags, where should she post her flags?



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4. Find the ratio in which the line segment joining the points (-3, 10) and (6, -8) is divided by (-1, 6).

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5. Find the ratio in which the line segment joining A(1, -5) and B(-4, 5) is divided by the x-axis. Also find the coordinates of the point of division.

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6. If (1, 2), (4, y), (x, 6) and (3, 5) are the vertices of a parallelogram taken in order, find x and y.

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7. Find the coordinates of a point A, where AB is the diameter of a circle whose centre is (2, -3) and B is (1, 4).

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8. If A and B are (-2, -2) and (2, -4), respectively, find the coordinates of P such that AP $= \frac{3}{7}AB$ and P lies on the line segment AB.

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

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10. Find the area of a rhombus if its vertices are (3, 0), (4, 5), (-1, 4) and (-2, -1) taken in order. [Hint : Area of a rhombus $= \frac{1}{2}$ (product of its diagonals)].

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Exercise 7 3

1. Find the area of the triangle whose vertices are

$(i)\ \ (2,3),\ (1,0),\ (2,\ 4)$ $(ii)(5,1),\ (3,5),\ (5,2)$

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2. In each of the following find the value of k for which the points are collinear.

$(i)\ (7,\ 2),(5,\ 1),(3,\ k)(ii)\ (8,\ 1),(k,\ 4),\ (2,\ 5)$

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3. 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 this area to the area of the given triangle.

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4. Find the area of the quadrilateral whose vertices, taken in order are (-4, -2), (-3, -5), (3, -2) and (2, 3).

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5. You have studied in Class IX, (Chapter 9, Example 3), that a median of a triangle divides it into two triangles of equal areas. Verify this result for ΔABC whose vertices are A(4, -6), B(3, -2) and C(5, 2).

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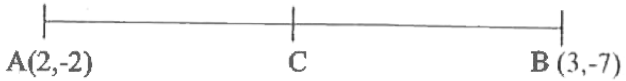
Exercise 7 4

1. Determine the ratio in which the line 2x + y - 4 = 0 divides the line segment joining the points A(2, -2)

and B(3, 7).



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

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3. Find the centre of a circle passing through the points (6, -6), (3, -7) and (3, 3).

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4. The two opposite vertices of a square are (-1, 2) and (3, 2). Find the coordinates of the other two vertices.

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5. The Class X students of a secondary school in Krishinagar have been allotted a rectangular plot of land for their gardening activity. Sapling of Gulmohar are planted on the boundary at a

distance of 1m from each other. There is a triangular gr

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6. The vertices of a $\Delta ABCareA(4, 6), B(1, 5)$ and $C(7, 2)$. A line is drawn to intersect side AB and AC at D and E respectively, such that $\frac{AD}{AB} = \frac{AE}{AC} = \frac{1}{4}$. Calculate the area of ΔADE and compare it with the area of ΔABC.

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