



MATHS

BOOKS - OSWAAL PUBLICATION

MATHS (KANNADA ENGLISH)

CO-ORDINATE GEOMETRY

**Topic 1 Co Ordinates And Quadrants Very Short
Answer Type Questions**

1. What is the abscissa of all the points on y - axis ?



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2. If the points $A(2,0)$, $B(-6,0)$ and $C(3,a-3)$ lie on x - axis , then determine the value of a .



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3. What are the conditions for points A,B,C and to form a parallelogram in a co- ordinate plane ?



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4. Name the abscissa and ordinate of (5,-6)



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Topic 1 Co Ordinates And Quadrants Short Answer Type Questions

1. Find 'a' so that $(3,a)$ lies on the line represented by $2x - 3y - 5 = 0$.Also , find the coordinates of the point where the line cuts the x - axis .



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Topic 2 Multiple Choice Questions

1. The distance between the points $p(x_1, y_1)$ and $q(x_2, y_2)$ given by is :

A. $\sqrt{(x_1 + x_2)^2 + (y_1 + y_2)^2}$

B. $\sqrt{(x_1 + x_2)^2 + (y_1 + y_2)^2}$

C. $\sqrt{(x_1 - x_2) - (y_1 + y_2)}$

D. $\sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2}$

Answer: D



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2. The Coordinates of origin are :

A. (1,1)

B. (2,2)

C. (0,0)

D. (3,3)

Answer: C



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3. The distance between the co - ordinate of points (p,q) from the origin :

A. $p^2 - q^2$

B. $\sqrt{p^2 - q^2}$

C. $\sqrt{p^2 + q^2}$

D. $q^2 - p^2$

Answer: C



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4. The distance between origin and a point (0,4) is :

A. 2

B. 4

C. 8

D. 16

Answer: B



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5. The distance between the points $(2,3)$ and $(6,6)$ is :

A. 5 units

B. 7 units

C. 3 units

D. 4 units

Answer: A



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6. Find the distance of the point $(-4,-7)$ from the y -axis.

A. 4 units

B. 12 units

C. 7 units

D. 8 units

Answer: a



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7. The distance of the points $(-4, -7)$ from the y - axis is :

A. 4 units

B. 7 units

C. 11 units

D. $\sqrt{65}$ units

Answer: A



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Topic 2 Very Short Answer Type Questions

1. Find the distance between the origin and the point $(12, -6)$



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2. Find the perpendicular distance of the points $(7,5)$ from the y - axis



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3. Points $(0,0)$, $(3, \sqrt{3})$ and (x,y) form an equilateral triangle , then what is (x,y) ?



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4. Find the coordinates of the point on x-axis which is equidistant from the points $(-2, 5)$ and $(2, -3)$



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5. Find the distance of $A(2 + \sqrt{3}, 2 - \sqrt{3})$ from origin .



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1. Find the distance of the points $P(3,4)$ and the origin .



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2. Find the value of k , if the points $A(2,3), B(4,k)$ and $C(6, - 3)$ are collinear .



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3. The Vertices of a triangle are $(8, -4)$, $(9, 5)$ and $(0, 4)$ Prove that triangle is an isoscele triangle .



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4. The distance between the points $(3,1)$ and $(0,x)$ is 5 units . Find x .



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5. Find the perimeter of a triangle whose vertices have the coordinates $(3,10)$, $(5,2)$ and $(14,12)$.



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6. Find the value x , such that the distance between the points $(2,5)$ and $(x,-7)$ is 13 units.



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7. Find the radius of a circle whose centre is $(-5, 4)$ and which passes through the point $(-7, 1)$



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Topic 2 Long Answer Type Questions I

1. (a) The distance between the points $(3,1)$ and $(0,x)$ is 5 units . Find x

(b) A point $P(2, -1)$ is equidistant from the

points $(a,7)$ and $(-3, a)$. Find 'a'

(c) Find a point on y - axis which is equidistant from the points $(5,2)$ and $(-4, 3)$.



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2. Find the distance between the origin and the point :

(a) $(-6, 8)$

(b) $(5,12)$

(c) $(-8, 15)$



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3. Prove that the points $A(1, -3)$, $B(-3, 0)$ and $C(4, 1)$ are the vertices of a right isosceles triangle.



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4. Show that the points $A(1,3)$, $B(2,6)$, $C(5,7)$ and $D(4,4)$ are the vertices of a rhombus.



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



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Topic 3 Multiple Choice Question

1. The co-ordinates of the mid - point of the line segment joining the points $(2,3)$ and $(4,7)$ is :

A. (3,5)

B. (7,3)

C. (3,4)

D. (8,3)

Answer: A



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Topic 3 Short Answer Type Question

1. Find the co-ordinates of the mid - point of the line joining the points $(-3,10)$ and $(6,-8)$.



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2. Find the ratio in which the points $(-1, k)$ divides the line joining the points $(-3, 10)$ and $(6, -8)$



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3. The point $(4,2)$ divides the line segment joining $(5, - 1)$ and $(2,y)$ in the ratio $1:2$.Find y .



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4. If the vertices of ΔABC are $A(5, - 1)$, $B(- 3, - 2)$, $C(- 1, 8)$ find the length of median through A.



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5. Find the mid - point of side BC of $\triangle ABC$ with $A(1, -4)$ and the mid - points of the sides through A being $(2, -1)$ and $(0, 1)$



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Topic 3 Long Answer Type Questions

1. In what ratio does the point $(-2, 3)$ divide the line segment joining the points $(-3, 5)$ and $(4, -9)$?



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2. If the point $C(1,1)$ divides the line segment joining $A(-2, 7)$ and B in the ratio $3:2$, find the coordinates of B .



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3. Three consecutive vertices of a parallelogram are $A(1,2)$, $B(2,3)$ and $C(8,5)$. Find the fourth vertex.



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4. Find the ratio in which the point $(-3, p)$ divides the line joining the points $(-5, -4)$ and $(-2, 3)$. Hence find the value of p .



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5. Prove that the diagonals of a rectangle with vertices $(0,0)$, $(a,0)$, (a,b) and $(0,b)$ bisect each other and are equal.



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Textbook Corner Exercise 7 1

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

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

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

(iii) $(a, b), (-a, -b)$



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2. Find the distance between the points $(0,0)$ and $(36,15)$. Can you now find the distance between the two towns A and B , if these two points $(0,0)$ and $(36,15)$ are represent town A and town B .



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



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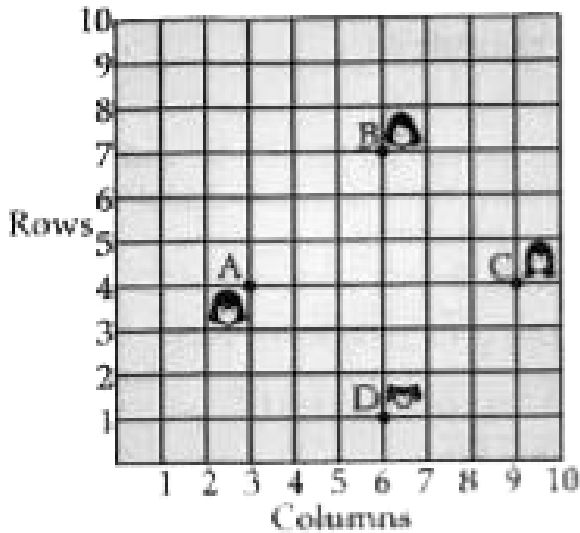
4. Check whether $(5, -2)$, $(6, 4)$ and $(7, 2)$ are the vertices of an isosceles triangle.



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5. In a classroom, 4 friends are seated at the points A, B, C and D as shown in Figure . 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. Using distance

formula , find which of them is correct .



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6. Name the type of quadrilateral formed, if any by the following points, and give reasons

for your answer :

$(4, 5), (7, 6), (4, 3), (1, 2)$



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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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Textbook Corner Exercise 7 2

1. 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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2. 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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3. 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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4. Find the area of Rhombus if its vertices are $(3,0)$ $(4,5)$ $(-1,4)$ and $(-2,-1)$ taken in order.



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1. Find the area of the triangle whose vertices are :

$(2, 3), (-1, 0), (2, -4)$



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

$(8, 1), (k, -4), (2, -5)$



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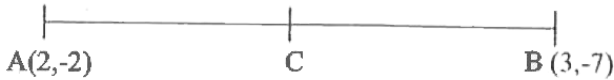
5. You have studied in Class IX, (Chapter 9, Example 3), that a median of a triangle divides it into two triangles of equal areas. Verify this result for $\triangle ABC$ whose vertices are $A(4, -6)$, $B(3, -2)$ and $C(5, 2)$.



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Textbook Corner 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 $(3, 3)$.



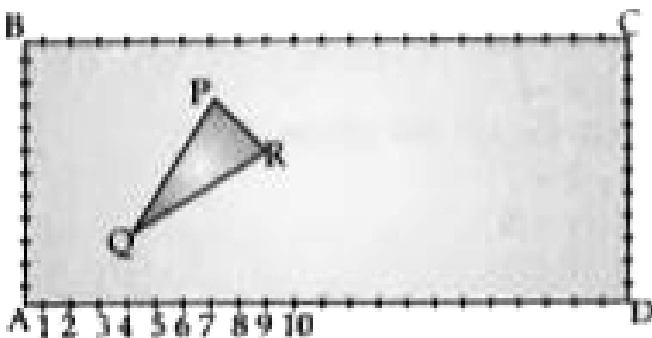
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4. The two opposite vertices of a square are $(-1, 2)$ and $(3, 2)$. Find the coordinates of the other two vertices.



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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 Gul mohar is planted on the boundary at a distance of 1m from each other . There is a triangular grassy lawn in the plot as shown in the figure . The students are to sow seeds of flowering plants on the remaining area of the plot .



(i) Taking A as origin , find the coordinates of the vertices of the triangle .

(ii) What will be the coordinates of the vertices of ΔPQR if C is the origin

Also calculate the areas of the triangles i these cases . What do you observe ?



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6. The vertices of a ΔABC are A (4,6), B (1, 5) and C (7,2). A line is drawn to intersect sides AB and AC at D and E respectively, such that

$\frac{AD}{AB} = \frac{AE}{AC} = \frac{1}{4}$. Calculate the area of Δ

ADE and compare it with area of ΔABC



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7. Let $A(4,2)$, $B(6,5)$ and $C(1,4)$ be the vertices of ΔABC .

(i) The median from A meets BC at D . Find the coordinates of the point D .

(ii) Find the coordinates of the point P on AD such that $AP:PD = 2:1$

(iii) Find the coordinates of points Q and R on

medians BE and CF respectively such that $BQ:QE = 2:1$ and $CR:RF = 2:1$.

(iv) What do you observe?

[Note : The point which is common to all the three medians is called the centroid and this point divides each median in the ratio $2:1$]

(v) If $A(x_1, y_1)$, $B(x_2, y_2)$ and $C(x_3, y_3)$ are the vertices of triangle ABC , find the coordinates of the centroid of the triangle.



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