



# MATHS

# NCERT - NCERT Maths(Tamil)

# **COORDINATE GEOMETRY**



1. What is the distance between A (4,0) and B (8, 0).

**2.** A and B are two points given by (8, 3), (-4, 3). Find

the distance between A and B.



4. Show that the points A (4, 2), B (7, 5) and C (9, 7)

are three points lying on a same line.

5. Do the points (3, 2), (-2, -3) and (2, 3) form a

triangle?

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6. Show that the points (1, 7), (4, 2), (-1, -1) and (-4, 4) are the

vertices of a squre.

7. State whether the following triangles are

congruent or not? Give reasons for your answer.





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



9. Find a point on the Y-axis which is equidistant

from both the points A(6, 5) and B(-4, 3).



10. Find the coordinates of the point which divides

the line segment joining the points (4, -3) and (8,

5) in the ratio 3 : 1 internally

11. Find the mid point of the line segment joining

the points (3, 0) and (-1, 4)



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



13. Find the centroid of the triangle whose vertices

are (3, -5), (-7, 4) and (10, -2).



**14.** In what ratio does the point (-4, 6) divide the line segment joining the points A(-6, 10) and B(3,

- 8)?



**15.** Find the ratio in which the y-axis divides the line segment joining the points (5, -6) and (-1, -4). Also find the point of intersection.

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**16.** Show that the points A(7, 3), B(6, 1), C(8, 2) and D(9, 4) taken in that order are vertices of a parallelogram.

**17.** If the points A(6, 1), B(8, 2), C(9, 4) and D(P, 3) are the vertices of a parallelogram, taken in order. Find the value of P.



18. Find the area of a triangle whose vertices are (1,

-1), (-4, 6) and (-3, -5).

19. Find the area of a triangle formed by the points

A(5, 2), B(4, 7) and C(7, -4).



A(-5,7), B(-4, -5), C(-1, -6) and D(4,5)are the vertices of a quadrilateral, find the area of the quadrilateral ABCD.

If

**21.** The points (3, -2) (-2, 8) and (0, 4) are three points in a plane. Show that these points are collinear.



22. Find the value of 'b' for which the points A(1, 2),

B(-1, b) and C(-3, -4) are collinear.



23. The end points of a line segment are (2, 3), (4,

5). Find the slope of the line segment.



24. Determine x so that 2 is the slope of the line

passing through P(2, 5) and Q(x, 3).

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Exercise 71

1. Find the distance between the pair of points

(2, 3) and (4, 1)



2. Find the distance between the pair of points

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

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3. Find the distance between the pair of points

(-2, -3) and (3, 2)



5. Find the distance between the points (0, 0) and

(36, 15).

6. Verify whether the points (1, 5), (2, 3) and (-2, -1)

are collinear or not.



7. Check whether (5, -2), (6, 4) and (7, -2) are the

vertices of an isosceles triangle.

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**8.** Find the value of a and b, given that  $p \parallel q$  and r

|| s.



**10.** Prove that the points (-7, -3), (5, 10), (15, 8) and (3, -5) taken in order are the corners of a parallelogram.

**11.** Show that the points (-4, -7), (-1, 2), (8, 5) and (5, -4) taken in order are the vertices of a rhombus. Find its area. (Hint : Area of rhombus  $=\frac{1}{2} \times$  product of its

diagonals)

**12.** Name the type of quadrilateral formed, if any, by the points, and give reasons for your answer.

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13. Name the type of quadrilateral formed, if any,

by the points, and give reasons for your answer.

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

14. Name the type of quadrilateral formed, if any,by the points, and give reasons for your answer.(4, 5), (7, 6), (4, 3), (1, 2)

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**15.** Find the point on the X-axis which is equidistant from (2, -5) and (-2, 9).

16. If the distance between two points (x, 7) and (1,

15) is 10, find the value of x



**17.** 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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18. Find the radius of the circle whose centre is (3,

2) and passes through (-5, 6).



19. Can you draw a triangle with vertices (1, 5), (5, 8)

and (13, 14)? Give reason



**20.** Find a relation between x and y such that the point (x, y) is equidistant from the points (-2, 8) and (-3, -5)



**1.** Find the coordinates of the point which divides the line segment joining the points (-1, 7) and (4, -3) in the ratio 2:3 .

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2. Find the coordinates of the points of trisection

of the line segment joining (4, -1) and (-2, -3).





the points (-3, 10) and (6, -8) is divided by (-1, 6).



**5.** 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).



**7.** Find the coordinates of points which divide the line segment joining A(-4, 0) and B(0, 6) into four equal parts.



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

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**9.** Find the coordinates of the point which divides the line segment joining the points (a + b, a - b) and (a - b, a + b) in the ratio 3 : 2 internally



10. Find the coordinates of centroid of the triangle

with vertices:

-1, 3), (6, -3) and (-3, 6)

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11. Find the coordinates of centroid of the triangle

with vertices:

(6, 2), (0, 0) and (4, -7)

12. Find the coordinates of centroid of the triangle

with vertices:

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

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#### Exercise 7 3

1. Find the area of the triangle vertices are

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



**4.** Find the value of 'K' for which the points are collinear



6. Find the value of 'K' for which the points are

collinear

(K, K) (2, 3) and (4, -1).



**7.** 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.



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



**9.** Find the area of the triangle formed by the points (2, 3), (6, 3) and (2, 6) by using Heron's formula

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Exercise 7 4

**1.** Find the slope of the line passing through the given two point

(4, -8) and (5, -2)



**2.** Find the slope of the line passing through the given two point

(0, 0) and  $\left(\sqrt{3},3
ight)$ 

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3. Find the slope of the line passing through the

given two point

(2a, 3b) and (a, -b)



**4.** Find the slope of the line passing through the given two point

(a, 0) and (0, b)



5. Find the slope of the line passing through the

given two point

A(-1.4, -3.7), B(-2.4, 1.3)



6. Find the slope of the line passing through the

given two point

A(3, -2), B(-6, -2)

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7. Find the slope of the line passing through the

given two point

$$Aigg(-3rac{1}{2},3igg), Bigg(-7,2rac{1}{2}igg)$$

8. Find the slope of the line passing through the

given two point

A(0, 4), B(4, 0)

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**Optional Exercise** 

**1.** Centre of a circle Q is on the Y-axis. The circle passes through the points (0, 7) and (0, -1). If it intersects the positive X-axis at (P, 0), what is the value of 'P'?



**2.** A triangle ABC is formed by the points A(2, 3), B(-2, -3), C(4, -3). What is the point of intersection of the side BC and the bisector of angle A?

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**3.** The side BC of an equilateral triangle DABC is parallel to X-axis. Find the slopes of the lines along sides BC, CA and AB.





### 1. Where do these following points lie (0, -3), (0, -8),

(0, 6) and (0, 4) on coordinate plane?

2. What is the distance between (0, -3), (0, -8) and justify that the distance between two points on Y-axis is  $|y^2 - y^1|$  on coordinate plane?

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**3.** Find the distance between points 'O' (origin) and

'A' (7, 4).



4. Find the distance between A(1, -3) and B(-4, 4)

and rounded to two decimal

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5. AD is the median on BC. Find the coordinates of

the point D

#### 6. Complete the table

ä	Б	ā. <i>b</i>	<i>b</i> . ã	$\vec{a} \times \vec{b}$	$\vec{b} \times \vec{a}$
i. $\hat{i} + 3\hat{j} + 4\hat{k}$	$4\hat{j} + 8\hat{k}$				
ii. $\hat{i} + \hat{j} - 6\hat{k}$	$2\hat{i} + \hat{j} + 8\hat{k}$				
iii. $2\hat{j} - 6\hat{k}$	$\hat{i} - 6\hat{j} + \hat{k}$				



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**7.** Find the coordinates of points Q and R on medians BE and CF respectively such that BQ:CF

=2:1 and CR:RF =2:1

**8.** Let A(4,2) B(6,5) and C(1,4)be the vertices of triangle. What do you observe? Justify that the point that divides each median in the ratio 2 : 1 is the centriod of a triangle.

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9. The vertices of a triangle have integer co-

ordinates then the triangle cannot be



**10.** Take a point A on X-axis and B on Y-axis and find area of the triangle AOB. Discuss with your friends how they do it?

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**11.** Find the area of the square formed by the points (0, -1), (2, 1) (0, 3) and (-2, 1) as vertices.



13. Find the slope of  $\overline{AB}$  , where

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

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**14.** Find the slope of  $\overline{AB}$  , where

A(-2, 8), B(-2, -2)



**15.** Justify that the line  $\overline{AB}$  line segment formed by points given in the above three examples is parallel to Y-axis. What can you say about their slope? Why? i) A(-4,2) , B(-4,-2)