



MATHS

NCERT - NCERT MATHS (GUJARATI ENGLISH)

COORDINATE GEOMETRY

Example

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



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

Find the distance between A and B.



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3. Let's find the distance between two points

$A(4, 3)$ and $B(8, 6)$



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4. Show that the points A (4, 2), B (7, 5) and C (9, 7) are three points lying on a same line.



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



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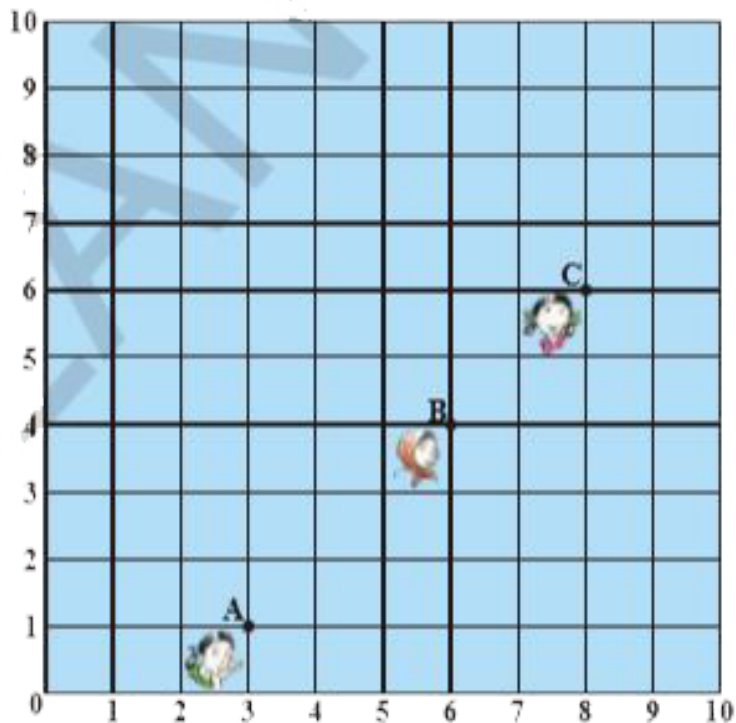
6. Show that the points $(1, 7)$, $(4, 2)$, $(-1, -1)$ and $(-4, 4)$ are the vertices of a square .



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7. The figure shows the arrangement of desks in a class room. Madhuri, Meena, Pallavi are seated at $A(3, 1)$, $B(6, 4)$ and $C(8, 6)$ respectively. Do you think they are seated in a line ? Give

reasons for your answer.



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8. Find the relation between x and y such that the point (x, y) is equidistant from the points

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



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9. Find a point on the Y-axis which is equidistant from both the points $A(6, 5)$ and $B(-4, 3)$.



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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



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11. Find the mid point of the line segment joining the points (3, 0) and (-1, 4)



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



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13. Find the centroid of the triangle whose vertices are $(3, -5)$, $(-7, 4)$ and $(10, -2)$.



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14. In what ratio does the point $(-4, 6)$ divide the line segment joining the points $A(-6, 10)$ and $B(3, -8)$?



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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.



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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 .



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18. Find the area of a triangle whose vertices are $(1, -1)$, $(-4, 6)$ and $(-3, -5)$.



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19. Find the area of a triangle formed by the points $A(5,2)$, $B(4,7)$ and $C(7,-4)$.



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



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



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22. Find the value of 'b' for which the points $A(1, 2)$, $B(-1, b)$ and $C(-3, -4)$ are collinear .



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23. The end points of a line segment are $(2, 3)$, $(4, 5)$. Find the slope of the line segment.



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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 7 1

1. Find the distance between the pair of points
(2, 3) and (4, 1)



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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 $(3, 2)$



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4. Find the distance between the pair of points

(a, b) and $(-a, -b)$



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



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6. Verify whether the points $(1, 5)$, $(2, 3)$ and $(-2, -1)$ are collinear or not.



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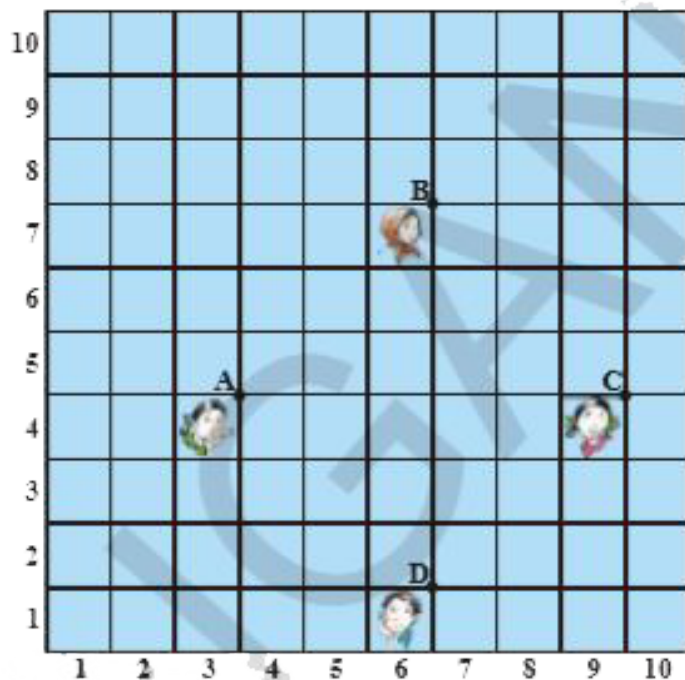
7. Check whether $(5, -2)$, $(6, 4)$ and $(7, -2)$ are the vertices of an isosceles triangle.



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8. In a class room, 4 friends are seated at the points A, B, C and D as shown in Figure. Jarina and Phani walk into the class and after observing for a few minutes Jarina asks Phani “Don’t you notice that ABCD is a square?” Phani disagrees. Using distance formula,

decide who is correct and why?



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9. Show that the following points form an equilateral triangle $A(a, 0)$, $B(-a, 0)$, $C(0, a\sqrt{3})$



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



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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)



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

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



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

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



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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 $(-2, 9)$.



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16. If the distance between two points $(x, 7)$ and $(1, 15)$ is 10, find the value of x



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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 $(-5, 6)$.



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19. Can you draw a triangle with vertices $(1, 5)$, $(5, 8)$ and $(13, 14)$? Give reason



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



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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 $(-2, -3)$.



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3. 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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4. 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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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).



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



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



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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



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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 $(4, -7)$



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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 whose vertices are :

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

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



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

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

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



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3. Find the area of the triangle vertices are

$(0, 0)$, $(3, 0)$ and $(0, 2)$



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4. In each of the following find the value of 'k',

for which the points are collinear :

(1) $(7,-2), (5,1), (3,k)$

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



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5. In each of the following find the value of 'k',
for which the points are collinear :

(1) $(7,-2), (5,1), (3,k)$

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



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

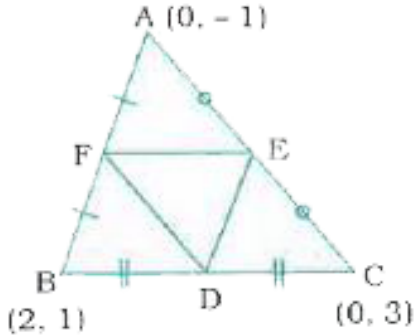
(K, K) $(2, 3)$ and $(4, -1)$.



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7. Find the area of the triangle formed by joining the midpoints 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

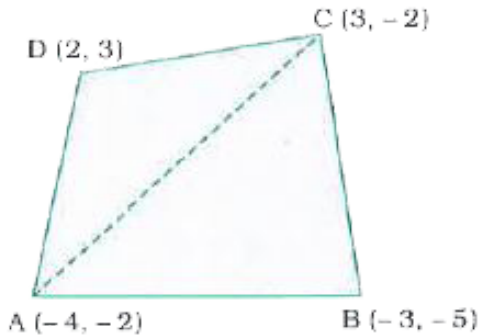
given triangle .



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8. 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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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 $(5, -2)$



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

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



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3. Find the slope of the line passing through the given two point

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



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

$(a, 0)$ and $(0, b)$



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5. Find the slope of the line passing through the given two point

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



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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

$$A\left(-3\frac{1}{2}, 3\right), B\left(-7, 2\frac{1}{2}\right)$$



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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'?



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2. 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 .



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3. Find the centroid of the triangle formed by the line $2x + 3y - 6 = 0$, with the coordinate axes.



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[Try This](#)

1. Where do these following points lie $(0, -3)$, $(0, -8)$, $(0, 6)$ and $(0, 4)$ on coordinate plane?



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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).



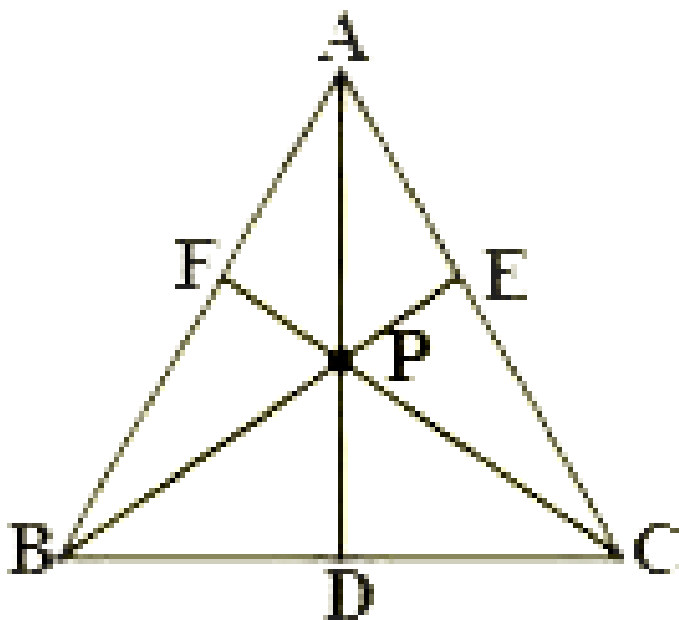
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4. Find the distance between A(1, -3) and B(-4, 4) and rounded to two decimal



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5. Find the coordinates of the point P on AD such that $AP : PD = 2 : 1$.



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6. 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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7. Find the area of the square formed by $(0, -1)$, $(2, 1)$ $(0, 3)$ and $(-2, 1)$ as vertices.



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

A(2, 1), B(2, 6)



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

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



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

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



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