

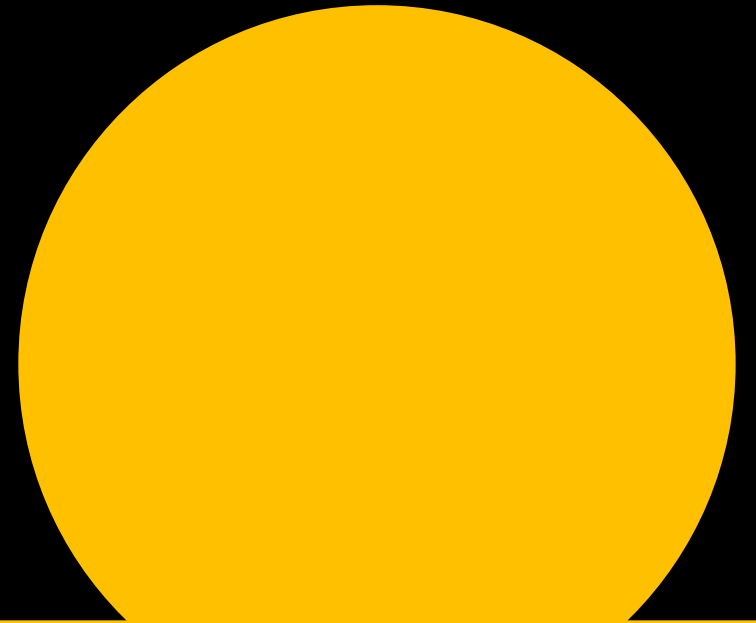


Subject Name – Mathematics

Class – 10th

Chapter Name – Coordinate Geometry

PPT No.– 01/01



By-Faculty name



Topics to be Covered

Sr. No.	TOPICS
1.	Introduction
2.	Quadrant in coordinate Geometry
3.	Distance Formula
4.	Section Formula
5.	Important terms related to triangle
6.	Area of Triangle



Topic: Introduction

Co-ordinate geometry or analytical geometry is the study of geometry using a co-ordinate system.

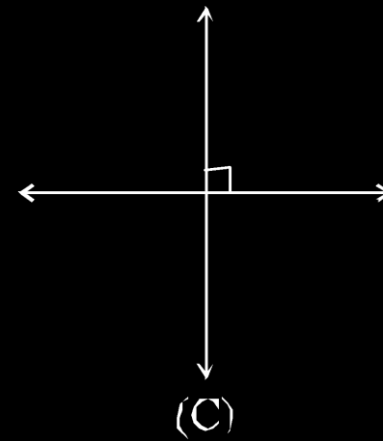
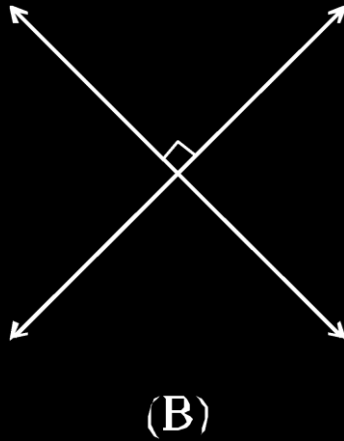
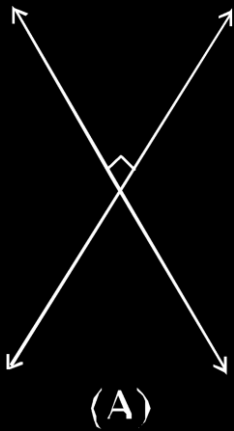
Used in Physics, Engineering, space science, rocketry, spaceflight, describe position of any object, location of air transport, map projections etc.

Cartesian System

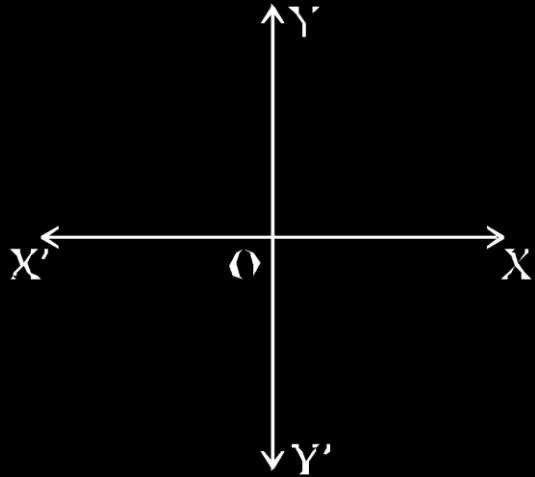
On the number line, distance from a fixed point are marked in equal units positively in one direction and negatively in the other. The point from which the distances are marked is called origin.

RENE DESCARTES, the great French mathematician invented the idea of placing two such lines perpendicular to each other on a plane.

Perpendicular lines may be in any directions as shown below:



But in this chapter, we will take horizontal & the other line as vertical as shown in fig. Cc)

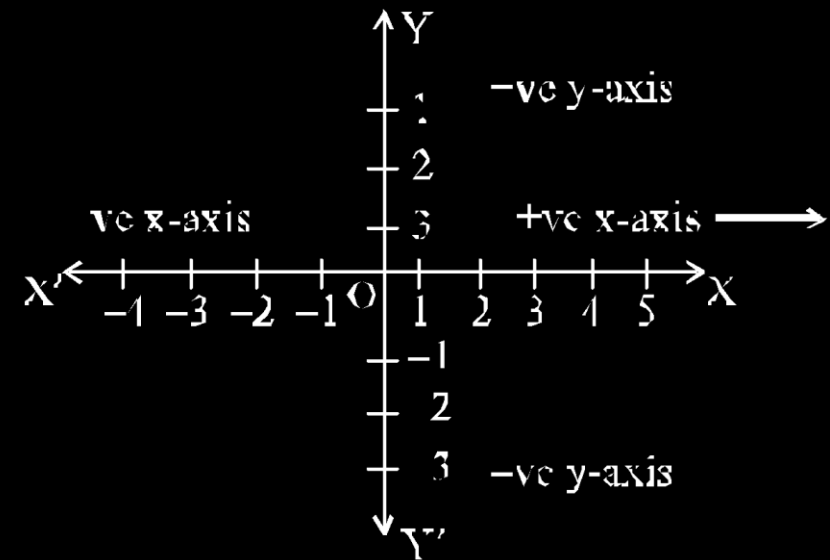


These two lines are called reference lines or co-ordinate axes.

Horizontal line $X'OX$ is called x-axis

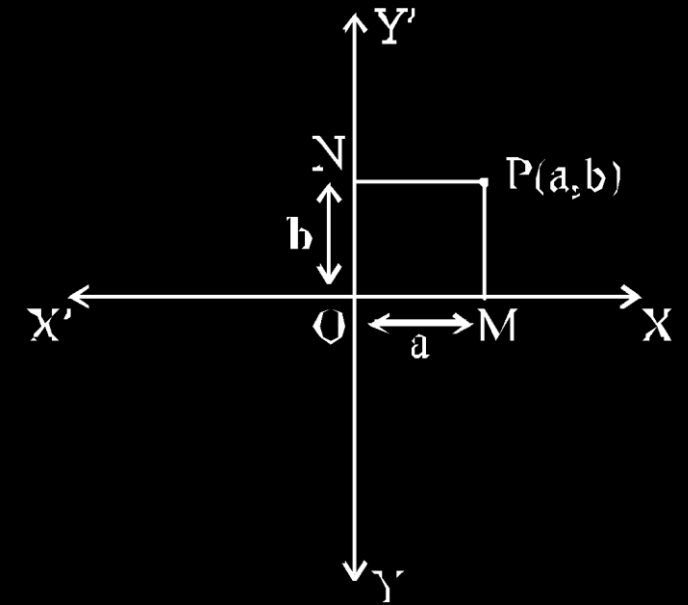
Vertical line $Y'OY$ is called y-axis

$X'OX$ & $Y'OY$ are two mutually perpendicular lines intersecting at a point O (origin) in a plane.



Abscissa:

- axis



1. Perpendicular of a point from x-axis
2. Measured parallel to y-axis

1. Perpendicular of a point from x-axis
2. Measured parallel to y-axis

P (7, 8)

X - co-ordinate

y - co-ordinate

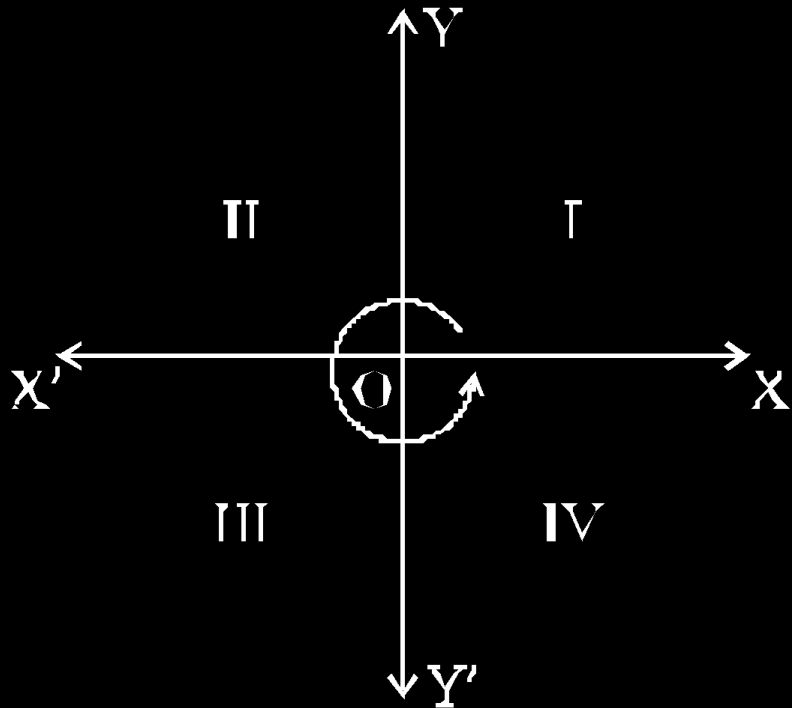
7 → abscissa

8 → ordinate



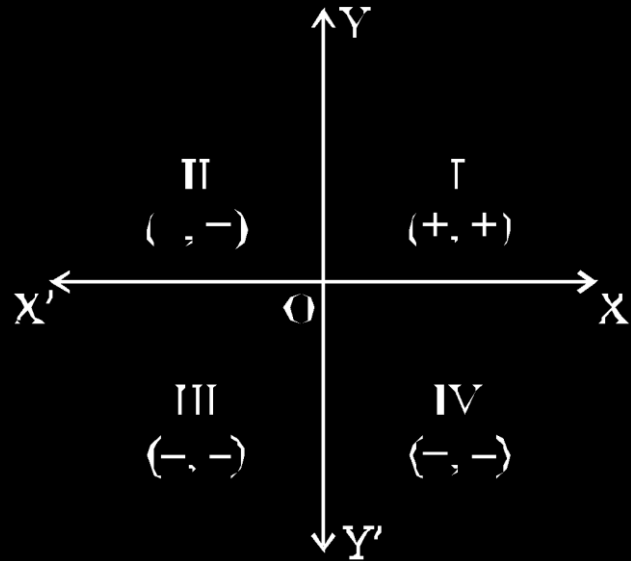
Topic : Quadrant in co-ordinate Geometry

Axes divides the plane into four equal parts. Each part is known as Quadrant.

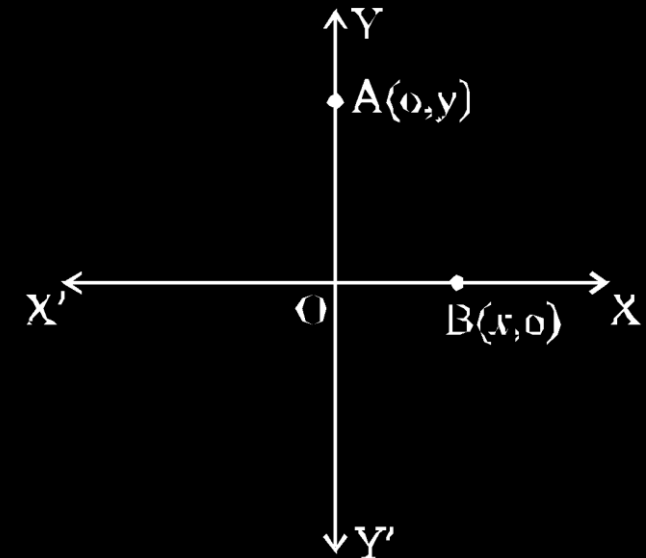


Anticlockwise

Sign Convention



- Co-ordinates of origin O are (0, 0)
- Abscissa of any point on y-axis is always zero
- Ordinate of any point on x-axis is always zero



Mirror Image

Point	Mirror Image in x-axis	Mirror Image in y-axis
(x, y)	$(x, -y)$	$(-x, y)$
$(-x, y)$	$(-x, -y)$	(x, y)
$(x, -y)$	(x, y)	$(-x, -y)$
$(-x, -y)$	$(-x, y)$	$(x, -y)$

Tip:

Mirror – x-axis → only change sign of ordinate

Mirror – y-axis → only change sign of abscissa



Topic : Quadrant in co-ordinate Geometry

From the options given below, choose in which quadrant the abscissa of a point is positive.

A

I and II quadrant

B

I quadrant only

C

II quadrant only

D

I and IV quadrants



Topic : Quadrant in co-ordinate Geometry

What is the name of the horizontal line in the Cartesian plane determining the position of a point?

A

Origin

B

X-axis

C

Y-axis

D

Quadrants



Topic : Quadrant in co-ordinate Geometry

Determine the values of (x,y) coordinates from the given equation:
 $(x+2, 4) = [5, y-2)$.

A

$(3,6)$

B

$(2,1)$

C

$(7,12)$

D

$(6,3)$



Topic : Quadrant in co-ordinate Geometry

The coordinates of the mirror image in the y -axis of point $(9,8)$ will be

A

$(-8,-9)$

B

$(-9,8)$

C

$(19,8)$

D

$(-9,-8)$



Topic : Quadrant in co-ordinate Geometry

Draw a triangle PQR where vertices P, Q and R are $(0, 2)$ $(2, -2)$ and $(-2, 2)$ respectively.



Topic : Quadrant in co-ordinate Geometry

Find the image of points $(0, 0)$ $(3, 0)$ $(0, 2)$ $(5, 1)$ $(-2, 3)$ $(-3, -3)$ with respect to y -axis.



Topic : Distance Formula

Distance between two points P (x_1, y_1) and Q (x_2, y_2)

P
 (x_1, y_1)

Q
 (x_2, y_2)

$$\text{Distance PQ} = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

It can be written as

$$\text{PQ} = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2}$$

or

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

or

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

How?

Now, what is your comment upon the distance between origin & and a point A (x_1, y_1) ?



Topic : Distance Formula

The distance of the point $P(2, 3)$ from the X-axis is

[NCERT Exemplar]

A

2

B

3

C

1

D

5



Topic : Distance Formula

The perimeter of a triangle with vertices $(0, 4)$, $(0, 0)$ and $(3, 0)$ is

[NCERT Exemplar]

A

5

B

12

C

11

D

$7 + \sqrt{5}$



Topic : Distance Formula

The distance between the points $A(0, 6)$ and $B(0, -2)$ is

[NCERT Exemplar]

A

6

B

8

C

4

D

2



Topic : Distance Formula

The points $(-4, 0)$, $(4, 0)$ and $(0, 3)$ are the vertices of a

[NCERT Exemplar]

A

Right angled triangle

B

Isosceles triangle

C

Equilateral triangle

D

Scalene triangle



Topic : Distance Formula

If AOBC is a rectangle whose three vertices are A(0, 3), O(0, 0) and B(5, 0),
then the length of its diagonal is [NCERT Exemplar]

A

5

B

3

C

$\sqrt{34}$

D

4



Topic : Distance Formula

If a circle drawn with origin as the centre passes through $\frac{13}{2}, 0$ then the point which does not lie in the interior of the circle is [NCERT Exemplar]

A

$$\left(-\frac{3}{4}, 1\right)$$

B

$$\left(2, \frac{7}{3}\right)$$

C

$$\left(5, \frac{-1}{2}\right)$$

D

$$\left(-6, \frac{5}{2}\right)$$



Topic : Distance Formula

Find the co-ordinates of the point on x-axis which are equidistant from the points $(-3, 4)$ and $(2, 5)$

[IMO]

A

$(20, 0)$

B

$(-23, 0)$

C

$\left(\frac{7}{7}, 0\right)$

D

None of these



Topic : Distance Formula

If Mohit wants to stand in such a way that he is equidistant from each of the four students A, B, C and D then what are the co-ordinates of his position?

A

(6, 6)

B

(7, 5)

C

(6, 4)

D

(4, 6)



Topic : Distance Formula

The co-ordinates of the third vertex of an equilateral triangle whose two vertices are at $(3, 4)$ $(-2, 3)$ are _ _ _ _

[IMO]

A

$(1, 7)$

B

$(5, 1)$

C

$\left(\frac{1 + \sqrt{3}}{2}, \frac{7 - 5\sqrt{3}}{2}\right) \text{ or } \left(\frac{1 - \sqrt{3}}{2}, \frac{7 + 5\sqrt{3}}{2}\right)$

D

$(-5, 5)$



Topic : Distance Formula

Points $(6, 8)$, $(+3, 7)$, $(-2, -2)$ and $(1, -1)$ are joined to form a quadrilateral. What will be the structure of the quadrilateral?

[IMO]

A

Rhombus

B

Parallelogram

C

Square

D

Rectangle



Topic : Distance Formula

Students of a school are standing in rows and column in their playground for drill practice. A, B, C and D are the position of four students.

(i) What is the difference of distance between AC and AD?

[IMO]

A

2 units

B

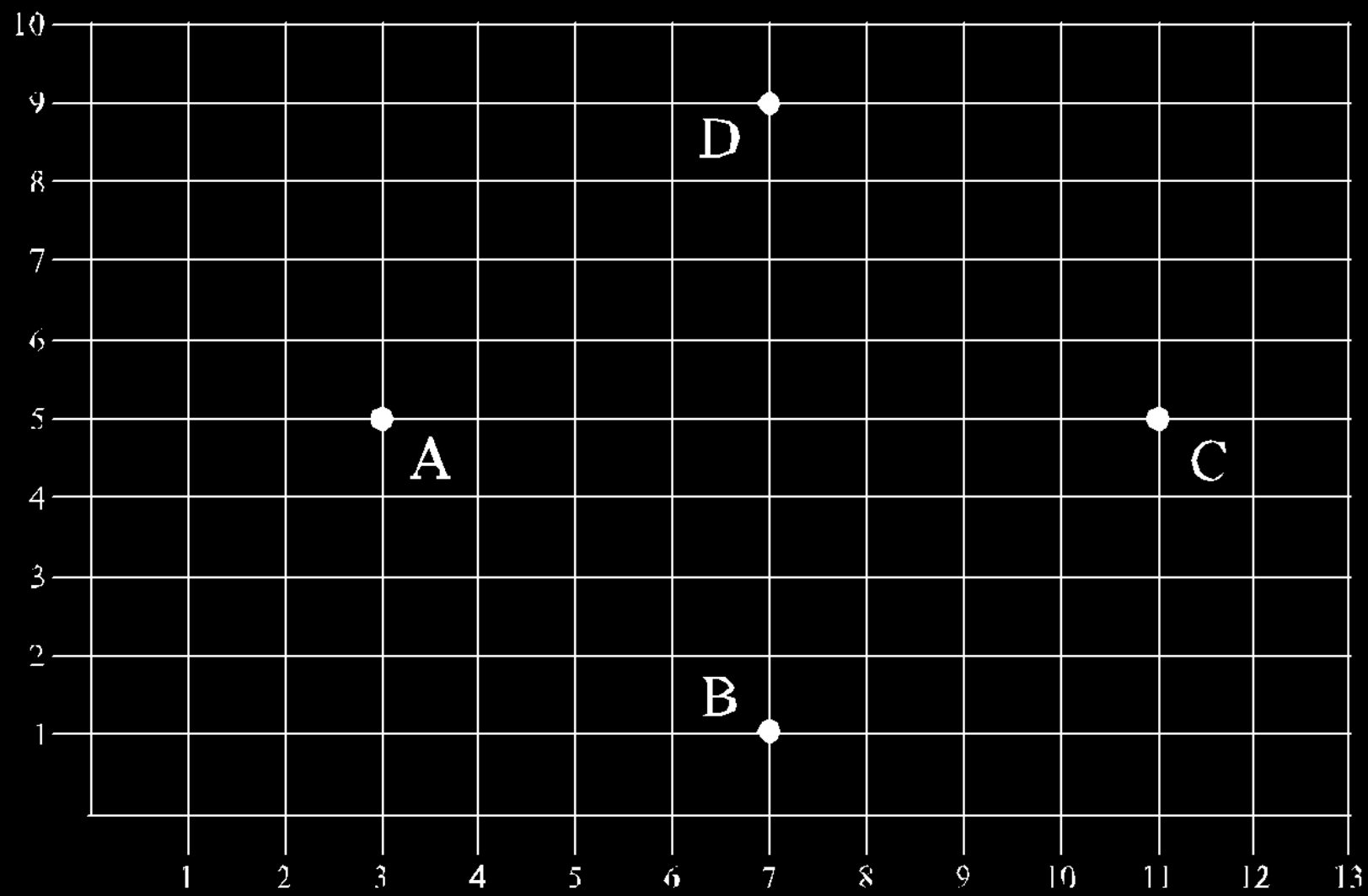
3.14 units

C

8 units

D

2.3 units





Topic : Distance Formula

Find the distance between $(-4, 5)$ and $(2, -3)$



Topic : Distance Formula

Find 'a' if the distance between points $A(8, -7)$ and $B(-4, a)$ is 13 units.



Topic : Distance Formula

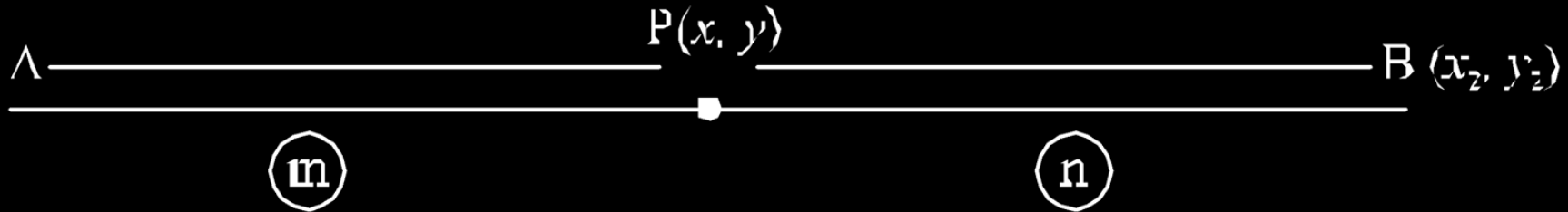
Find the co-ordinate of a point on y-axis which is equidistant from $(13, 2)$ and $(12, -3)$



Topic : Section Formula

Used to find the ratio in which a line segment is divided by a point internally or externally.

Internal Division



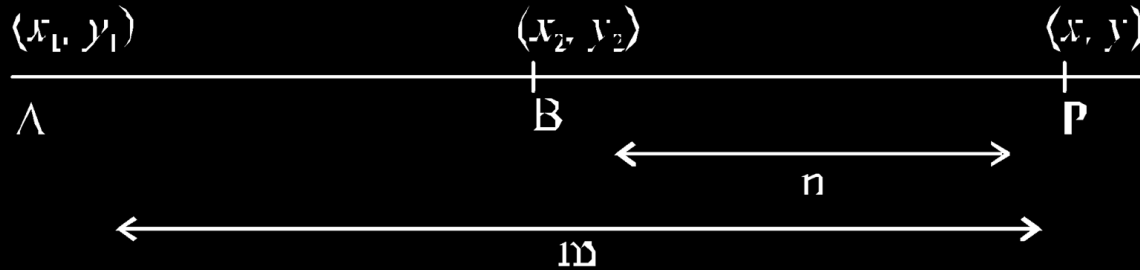
$$AP : PB = m : n$$

Then we say that P divides $\overline{AB}$ in the ratio $m : n$

Point of division has co-ordinates

$$P = \left(\frac{mx_2 + nx_1}{m+n}, \frac{my_2 + ny_1}{m+n} \right)$$

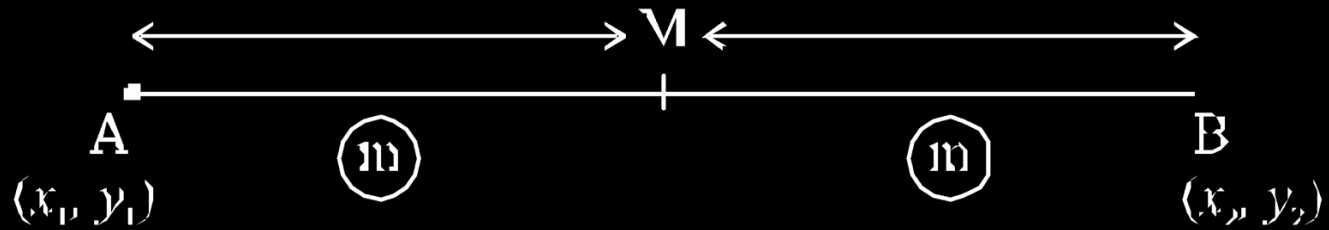
External Division



When the point which divides the line segment in the ratio $m : n$ lies outside the line segment point of division has co-ordinates

$$P = \left(\frac{mx_2 - nx_1}{m-n}, \frac{my_2 - ny_1}{m-n} \right)$$

Mid – Point



Ratio is 1 : 1

Mid – point M of AB will be $\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right)$



Topic : Section Formula

The ratio in which the line segment joining the points $P(-3, 10)$ and $Q(6, -8)$ is divided by $O(-1, 6)$ is:

A

1 : 3

B

3 : 4

C

2 : 7

D

2 : 5



Topic : Section Formula

If $O(p/3, 4)$ is the midpoint of the line segment joining the points $P(-6, 5)$ and $Q(-2, 3)$, the value of p is:

A

$7/2$

B

-12

C

4

D

-4



Topic : Section Formula

The point which divides the line segment of points $P(-1, 7)$ and $(4, -3)$ in the ratio of 2:3 is:

A

$(-1, 3)$

B

$(-1, -3)$

C

$(1, -3)$

D

$(1, 3)$



Topic : Section Formula

Four vertices of a parallelogram taken in order are $(-3, -1)$ (a, b) $(3, 3)$ and $(4, 3)$. What will be $a : b$ -

[IMO]

A

4 : 1

B

1 : 2

C

1 : 3

D

3 : 1



Topic : Section Formula

The point which divides the line segment joining the points $(7, -6)$ and $(3, 4)$ in ratio $1 : 2$ internally lies in the [NCERT Exemplar]

A

I quadrant

B

II quadrant

C

III quadrant

D

IV quadrant



Topic : Section Formula

The point which lies on the perpendicular bisector of the line segment joining the points $A(-2, -5)$ and $B(2, 5)$ is [NCERT Exemplar]

A

$(0, 0)$

B

$(0, 2)$

C

$(2, 0)$

D

$(-2, 0)$



Topic : Section Formula

The fourth vertex D of a parallelogram ABCD whose three vertices are $A(-2, 3)$, $B(6, 7)$ and $C(8, 3)$ is [NCERT Exemplar]

A

$(0, 1)$

B

$(0, -1)$

C

$(-1, 0)$

D

$(1, 0)$



Topic : Section Formula

If the point $P(2,1)$ lies on the line segment joining points $A(4, 2)$ and $B(8, 4)$,
then [NCERT Exemplar]

A

$$AP = \frac{1}{3}AB$$

B

$$AP = PB$$

C

$$PB = \frac{1}{3}AB$$

D

$$AP = \frac{1}{2}AB$$



Topic : Section Formula

Point M which divides the line segment PQ joining the points P(5, 4) and Q (−6, 7) in the ratio 2 : 1 internally lies in the _____ quadrant.

A

First

B

Second

C

Third

D

Fourth



Topic : Section Formula

True / False

- a). The abscissa and ordinate of a point in III quadrant have different sign.
- b). Distance of the point $(7, 6)$ from y-axis is 7 units.
- c). Distance of point from the x-axis is called its ordinate.
- d). If the co-ordinates of the points P, Q, R and S are such that $PQ = QR = RS = PS$ then quadrilateral PQRS is a square.

A

T F T F

B

F T T F

C

T F F T

D

F T F T



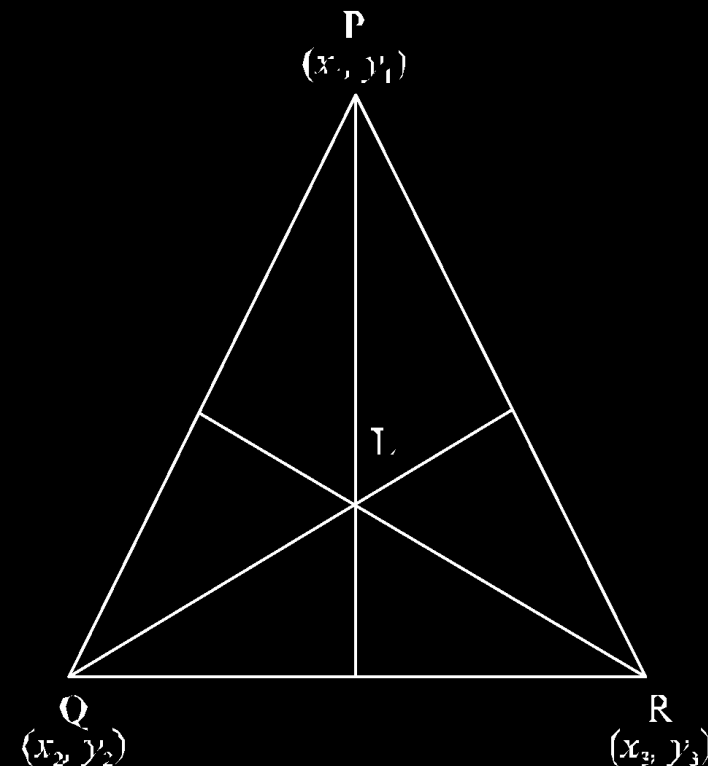
Topic : Important Terms Related to Triangle

Centroid:

Point of intersection of three median of a triangle

Co-ordinates of centroid L are

$$\left(\frac{x_1 + x_2 + x_3}{3}, \frac{y_1 + y_2 + y_3}{3} \right)$$



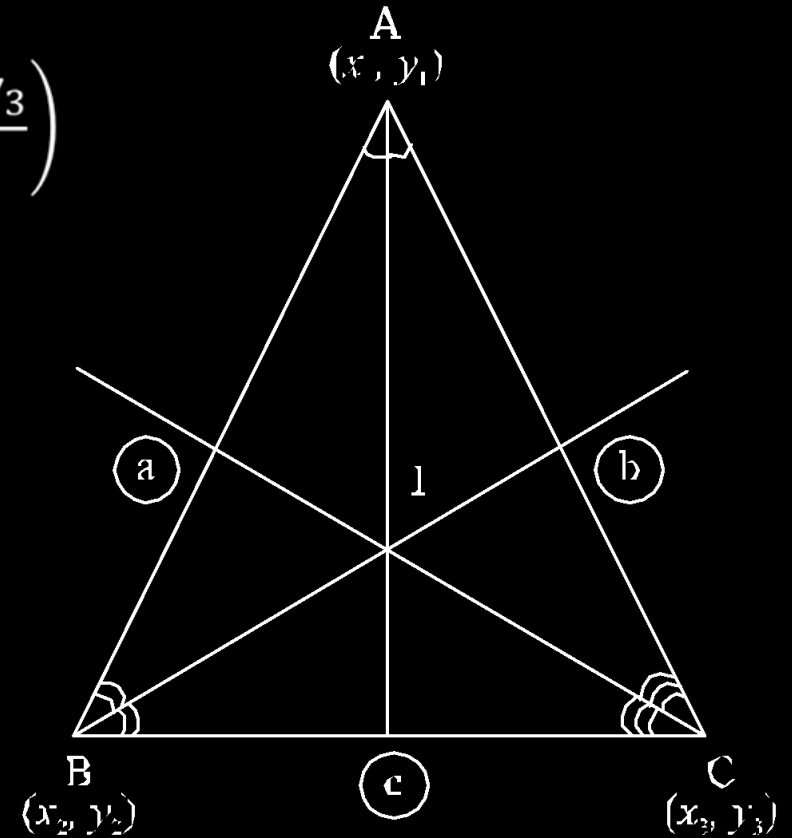
Incentre of a Triangle

Point of intersection of internal angle bisectors of the triangle

Co-ordinates of incentre I are:

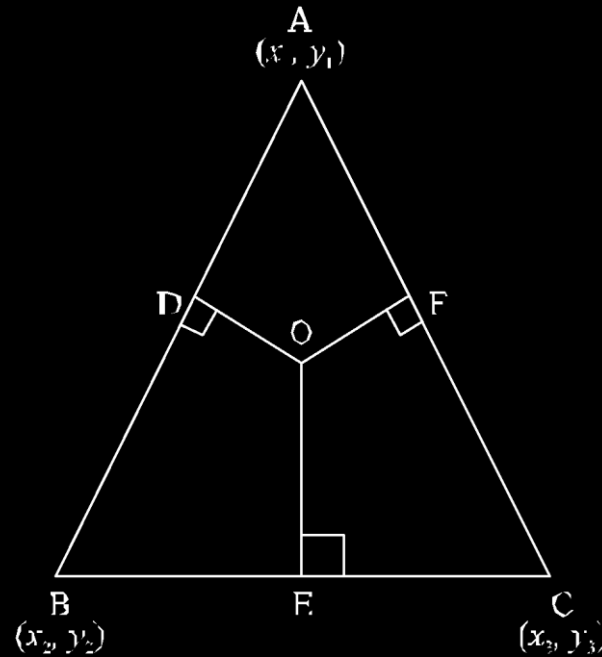
$$\left(\frac{ax_1 + bx_2 + cx_3}{a + b + c}, \frac{ay_1 + ay_2 + ay_3}{a + b + c} \right)$$

A, b, c are the three lengths



Circumcentre of a Triangle

Point of intersection of perpendicular bisectors of sides of the triangle

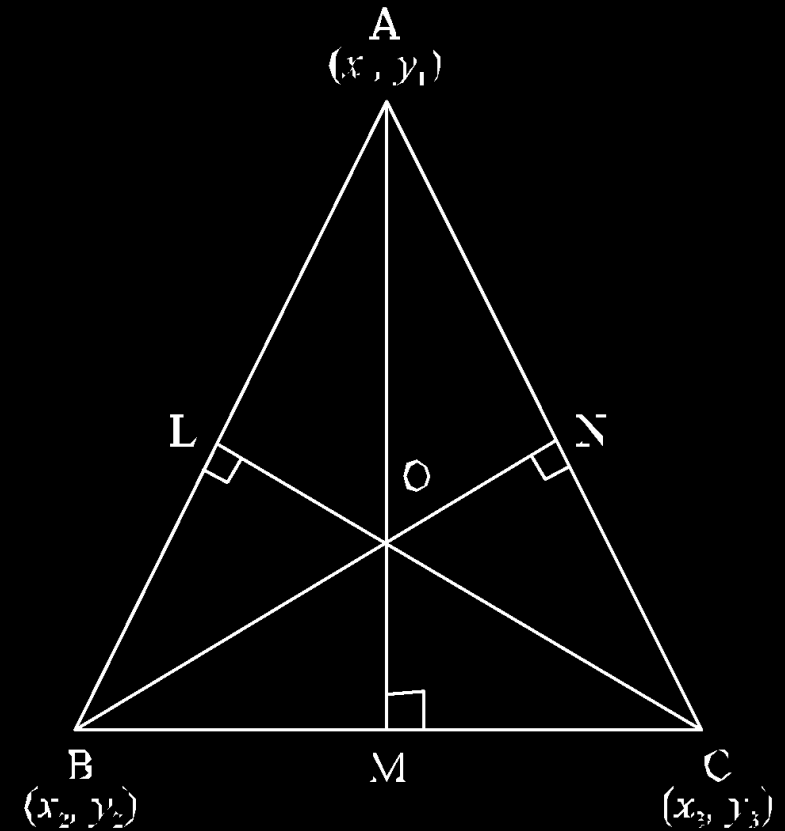


In a right angled triangle, the circumcentre is the mid – point of hypotenuse.

Orthocentre of a Triangle

Point of intersection of three altitudes of a triangle.

- ❖ In right angled triangle, orthocentre is formed on right vertex of a triangle.
- ❖ In an equilateral triangle, centroid, incentre, circumcentre orthocentre coincides.
- ❖ Centroid, Circumcentre & orthocentre of a triangle are always collinear.
- ❖ Centroid divides the line joining orthocentre and circumcentre in the ratio 2 : 1.





Topic : Important Terms Related to Triangle

If coordinates of orthocentre and centroid of a triangle are $(6, -1)$ and $(4, 1)$ then coordinates of a point which is equidistant from the vertices of the triangle is:

A

$(3, 2)$

B

$(2, -3)$

C

$(2, 3)$

D

$(-3, 2)$



Topic : Important Terms Related to Triangle

The Centroid of a triangle separates the medians in the ratio of

A

1 : 2

B

2 : 1

C

3 : 1

D

1 : 3



Topic : Important Terms Related to Triangle

If the centroid and two vertices of the triangle are $(1, \frac{13}{3})$, $(4, 5)$ and $(-1, 1)$ respectively, then the area(in square units) of the triangle is:

A

13

B

14

C

15

D

More than one of the above



Topic : Important Terms Related to Triangle

If the centroid, of a triangle is $(6, 6)$ and its orthocentre is $(0, 0)$ then find its circumcentre.

A

$(2, 2)$

B

$(1, 1)$

C

$(6, 6)$

D

$(9, 9)$



Topic : Important Terms Related to Triangle

If the centroid of the triangle formed by the points (a, b) (b, c) and (c, a) is at the origin, then $a^3 + b^3 + c^3 = \text{-----}$

[IMO]

A

abc

B

$a+b+c$

C

0

D

$3abc$



Topic : Important Terms Related to Triangle

Find the third vertex of $\triangle ABC$ if two of its vertices are $A(-2, 3)$ $B(4, 5)$ and its centroid is $C(1, 2)$



Topic : Important Terms Related to Triangle

Find the circumcentre and the circumradius of a triangle ABC formed by the vertices $A(2, -2)$, $B(-1, 1)$ and $C(3, 1)$

Hint: Circumcentre is at equal distance from all the three vertices of triangle



Topic : Important Terms Related to Triangle

Find the centroid of $\triangle ABC$ whose vertices are A (2, -3) B(4, 2) and C (-3, -2)



Topic : Important Terms Related to Triangle

Find the orthocentre of $\triangle ABC$ formed by the vertices $A(1, 6)$ $B(5, 2)$ and $C(12, 9)$

Hint: $\triangle ABC$ is a right triangle



Topic : Area of triangle

$$\frac{1}{2} [x_1(y_2 - y_3) + x_2(y_3 - y_1) + x_3(y_1 - y_2)]$$

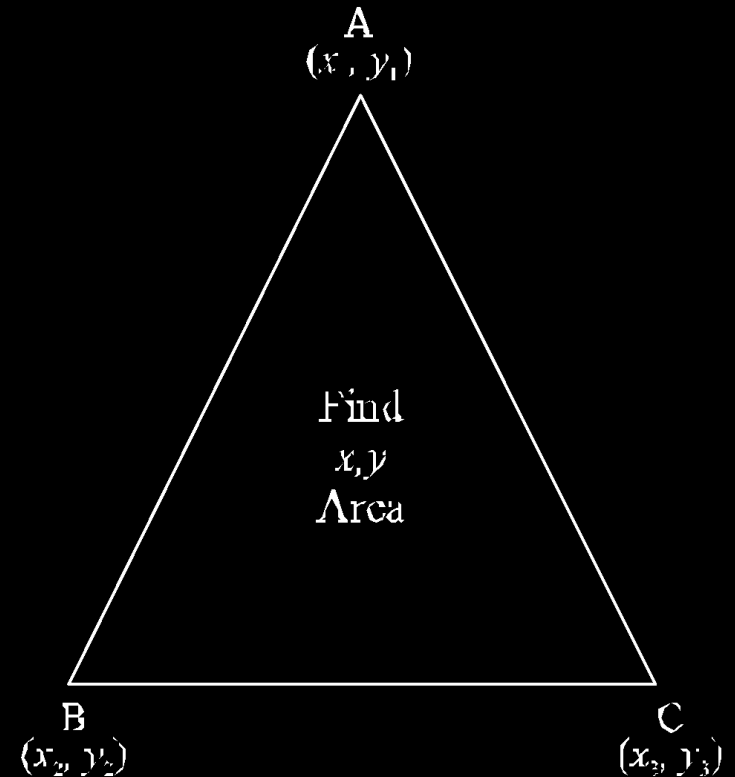
Point to be Noted:

1. If area of a triangle is zero sq. units it means its vertices are collinear.

$$x_1(y_2 - y_3) + x_2(y_3 - y_1) + x_3(y_1 - y_2) = 0$$

2. Area of triangle can also be calculated as

$$\frac{1}{2} [x_1y_2 + x_2y_3 + x_3y_1 - (x_1y_3 + x_2y_1 + x_3y_2)]$$



Area of a Polygon

Divide the polygon into triangle regions, which don't have common areas.
Add the area of all these triangular regions to get the area of polygon.

Let $(x_1y_1)(x_2y_2) \dots (x_ny_n) \rightarrow n - \text{vertices of polygon}$

Then $= \frac{1}{2} |(x_1y_2 - x_2y_1) + (x_2y_3 - x_3y_2) + (x_3y_4 - x_4y_3) + \dots - (x_ny_1 - x_1y_n)|$

Point to be Noted:

Area of square $= \frac{1}{2} [(x_2 - x_1)^2 + (y_2 - y_1)^2]$

Where (x_1y_1) & (x_2y_2) are the co-ordinates of the opposite vertices of square.

Collinearity of Three Points

A, B, C – three points

Find AB, BC, AC

Sum of any two of these distance is equal to the third distance then A, B, C are to be collinear.

$$AB + BC = AC$$



$$AC + CB = AB$$



$$BA + AC = BC$$



Collinearity of Three Points

Point to be Noted:

4th Vertex of a ||gm whose three consecutive vertices are (x_1y_1) (x_2y_2) and (x_3y_3) when taken in order is $(x_1 - x_2 + x_3, y_1 - y_2 + y_3)$



Topic : Area of Triangle

The area of a rhombus whose vertices are $(3,0)$, $(4, 5)$, $(-1, 4)$ and $(-2,-1)$ taken in order, is: [NCERT Exemplar]

A

12 sq.units

B

24 sq.units

C

30 sq.units

D

32 sq.units



Topic : Area of Triangle

If the points $A(1, 2)$, $B(0, 0)$ and $C(a, b)$ are collinear, then

[NCERT Exemplar]

A

$$a = b$$

B

$$a = 2b$$

C

$$2a = b$$

D

$$a = -b$$



Topic : Area of Triangle

The area of a triangle with vertices $A(3, 0)$, $B(7, 0)$ and $C(8, 4)$ is

[NCERT Exemplar]

A

14

B

28

C

8

D

6



Topic : Area of Triangle

The area of a triangle with vertices $(a, b + c)$, $(b, c + a)$ and $(c, a + b)$ is

[NCERT Exemplar]

A

$$(a + b + c)^2$$

B

$$0$$

C

$$(a + b + c)$$

D

$$abc$$



Topic : Area of triangle

If $A(2, 2)$ $B(4, 4)$ and $(2, 6)$ are the vertices of a triangle ABC and D, E, F are the mid – points of AB, BC and AC respectively then

- i) Find area of $\triangle ABC$
- ii) Find area of $\triangle DEF$
- iii) Find ratio of area of $\triangle DEF$ to $\triangle ABC$

[IMO-2016]

	(i)	(ii)	(iii)
A	8 sq. units	2 sq. units	1 : 4
B	6 sq. units	3 sq. units	1 : 2
C	4 sq. units	1 sq. units	1 : 4
D	3 sq. units	1 sq. units	1 : 3



Topic : Area of triangle

Find the area (in sq. units) of the triangle whose vertices are $(a, b + c)$, $(a, b - c)$ and $(-a, c)$

[IMO]

A

$2ac$

B

$2bc$

C

$b(a+c)$

D

$c(a-b)$



Topic : Area of triangle

The value of 't', if the area of pentagon ABCDE is $\frac{45}{2}$ sq. units where A(1, 3), B(-2, 5), C(-3, -1), D(0, -2) and E (2, t) are _____.

[IMO]

A

-1, 17

B

-1, 106

C

1, 17

D

1, 18



Topic : Area of triangle

Three points $A(1, -2)$ $B(3, 4)$ and $C(4, 7)$ form -

[IMO]

A

a straight line

B

An equilateral triangle

C

A right – angled triangle

D

None of these



Topic : Area of triangle

To raise social awareness about the hazards of smoking, a school decided to start "No Smoking Campaign". A student is asked to prepare a campaign banner in the shape of triangle shown in the figure. If cost of 1cm^2 of banner is Rs 2 then find the cost of banner.

[IMO]

A

Rs. 12

B

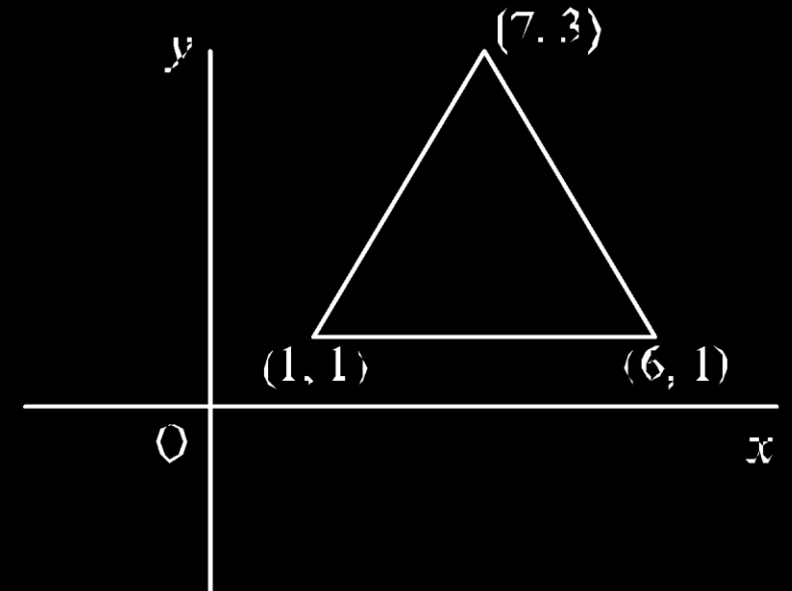
Rs. 6

C

Rs. 5

D

Rs. 10





Topic : Area of triangle

If the area of the triangle formed by the points $(x, 2x)$, $(-2, 6)$ and $(3, 1)$ is 5 sq. units then $x =$

[IMO]

A

2

B

$\frac{3}{5}$

C

3

D

$\frac{5}{3}$



Topic : Area of triangle

Find area of the square whose one pair of opposite vertices are $(2, -3)$ and $(4, 5)$



Topic : Area of triangle

Find the area of circle whose centre is $(-1, -2)$ and $(3, 4)$ is a point on the circle



Topic : Area of triangle

Find the 4th vertex of ||gm whose three vertices are $(8, 8)$ $(6, 1)$ and $(-1, 1)$



Topic : Homework

- #Q.** Find the coordinates of the point Q on the x-axis which lies on the perpendicular bisector of the line segment joining the points A $(-5, -2)$ and B $(4, -2)$. Name the type of triangle formed by the points Q, A and B.
[NCERT Exemplar]
- #Q.** Find the value of m if the points $(5, 1)$, $(-2, -3)$ and $(8, 2m)$ are collinear.
[NCERT Exemplar]
- #Q.** If the point A $(2, -4)$ is equidistant from P $(3, 8)$ and Q $(-10, y)$, find the values of y. Also find distance PQ.
[NCERT Exemplar]
- #Q.** Find the area of the triangle whose vertices are $(-8, 4)$, $(-6, 6)$ and $(-3, 9)$.
[NCERT Exemplar]
- #Q.** In what ratio does the x-axis divide the line segment joining the points $(-4, -6)$ and $(-1, 7)$? Find the coordinates of the point of division.
[NCERT Exemplar]



Topic : Homework

- #Q. If P $(9a-2, -b)$ divides line segment joining A $(3a + 1, -3)$ and B $(8a, 5)$ in the ratio 3:1, find the values of a and b. [NCERT Exemplar]
- #Q. If (a, b) is the mid-point of the line segment joining the points A $(10, -6)$ and B $(k, 4)$ and $a + 2b = 18$, find the value of k and the distance AB. [NCERT Exemplar]
- #Q. The centre of a circle is $(2a, a-7)$. Find the values of a if the circle passes through the point $(11, -9)$ and has diameter $10\sqrt{2}$ units. [NCERT Exemplar]
- #Q. The line segment joining the points A $(3, 2)$ and B $(5, 1)$ is divided at the point P in the ratio 1:2 and it lies on the line $3x - 18y + k = 0$. Find the value of k. [NCERT Exemplar]
- #Q. The points A $(2, 9)$, B $(a, 5)$ and C $(5, 5)$ are the vertices of a triangle ABC right angled at B. Find the values of a and hence the area of $\triangle ABC$. [NCERT Exemplar]



Topic : Homework

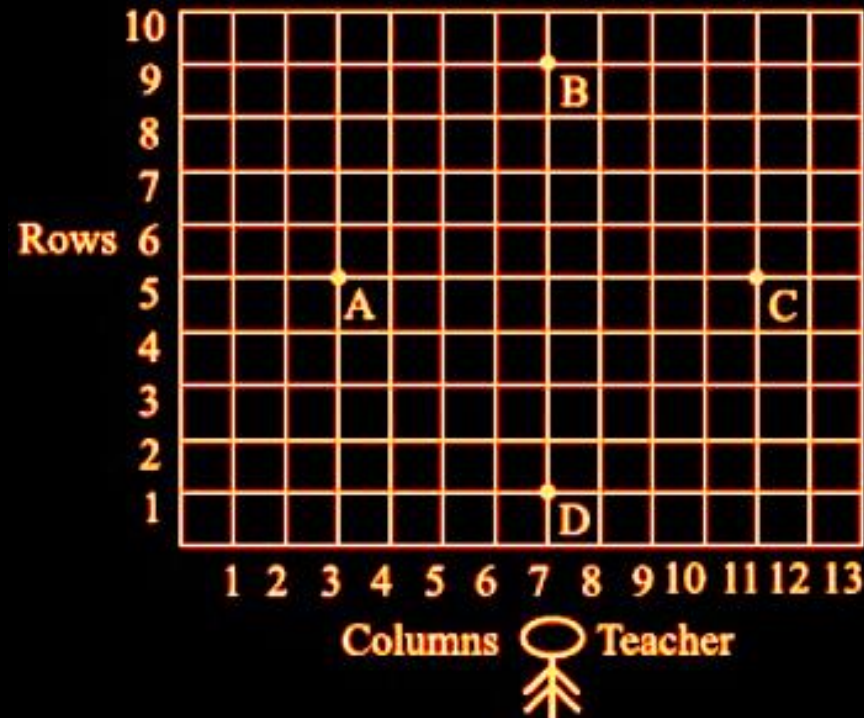
- #Q.** The points $A (x_1, y_1)$, $B (x_2, y_2)$ and $C (x_3, y_3)$ are the vertices of $\triangle ABC$.
- (i) The median from A meets BC at D. Find the coordinates of the point D.
 - (ii) Find the coordinates of the point P on AD such that $AP:PD = 2:1$
 - (iii) Find the coordinates of points Q and R on medians BE and CF, respectively such that $BQ:QE = 2:1$ and $CR:RF = 2:1$
 - (iv) What are the coordinates of the centroid of the triangle ABC?
- [NCERT Exemplar]
- #Q.** If the points A (1, 2), B (2, 3) C (a, 2) and D (-4, -3) form a parallelogram, find the value of a and height of the parallelogram taking AB as base.
- [NCERT Exemplar]



Topic : Homework

#Q. Students of a school are standing in rows and columns in their playground for a drill practice. A, B, C and D are the positions of four students as shown in figure. Is it possible to place Jaspal in the drill in such a way that he is equidistant from each of the four students. A, B, C and D? If so, what should be his position?

[NCERT Exemplar]





Topic : Homework

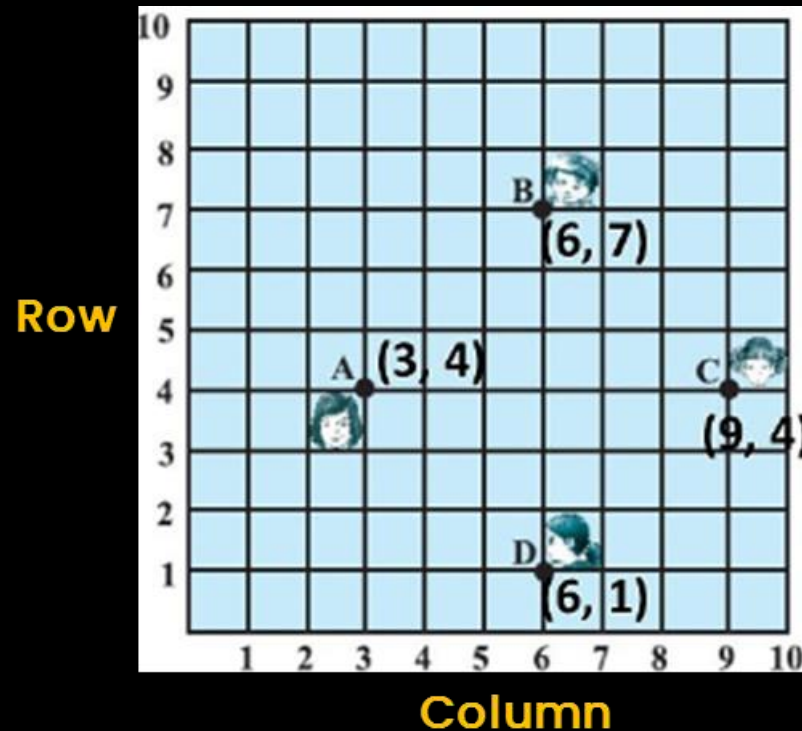
- #Q.** Find the distance between the following pairs of points: [NCERT]
- (i) $(2, 3), (4, 1)$
 - (ii) $(-5, 7), (1, 3)$
 - (iii) $(a, b), (a, b)$
- #Q.** Find the distance between the points $(0, 0)$ and $(36, 15)$. Can you now find the distance between the two towns A and B discussed in Section 7.2. [NCERT]
- #Q.** Determine if the points $(1, 5), (2, 3)$ and $(-2, -11)$ are collinear. [NCERT]
- #Q.** Check whether $(5, 2), (6, 4)$ and $(7, -2)$ are the vertices of an isosceles triangle. [NCERT]



Topic : Homework

#Q. In a classroom, 4 friends are seated at the points A, B, C and D as shown in Fig. 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.

[NCERT]





Topic : Homework

#Q. Name the type of quadrilateral formed, if any, by the following points, and give reasons for your answer: [NCERT]

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

(ii) $(-3, 5), (3, 1), (0, 3), (-1, -4)$

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

#Q. Find the point on the x-axis which is equidistant from $(2, -5)$ and $(-2, 9)$. [NCERT]

#Q. Find the values of y for which the distance between the points $P(2, -3)$ and $Q(10, y)$ is 10 units. [NCERT]

#Q. Find the coordinates of the points of trisection of the line segment joining $(4, -1)$ and $(-2, -3)$. [NCERT]



Topic : Homework

- #Q.** Find the ratio in which the line segment joining the points $(-3, 10)$ and $(6, 8)$ is divided by $(-1, 6)$. [NCERT]
- #Q.** 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.
- #Q.** If $(1, 2)$, $(4, y)$, $(x, 6)$ and $(3, 5)$ are the vertices of a parallelogram taken in order, find x and y . [NCERT]
- #Q.** Find the coordinates of a point A , where AB is the diameter of a circle whose centre is $(2, 3)$ and B is $(1, 4)$. [NCERT]
- #Q.** Find the coordinates of the points which divide the line segment joining $A(-2, 2)$ and $B(2, 8)$ into four equal parts. [NCERT]



Topic : Homework

- #Q.** Determine the ratio in which the line $2x + y - 4 = 0$ divides the line segment joining the points $A(2, -2)$ and $B(3, 7)$ [NCERT]
- #Q.** Find a relation between x and y if the points (x, y) , $(1, 2)$ and $(7, 0)$ are collinear. [NCERT]
- #Q.** Find the centre of a circle passing through the points $(6, 6)$, $(3, -7)$ and $(3, 3)$. [NCERT]
- #Q.** The two opposite vertices of a square are $(-1, 2)$ and $(3, 2)$. Find the coordinates of the other two vertices. [NCERT]

