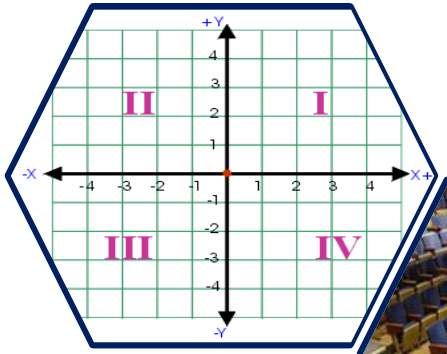
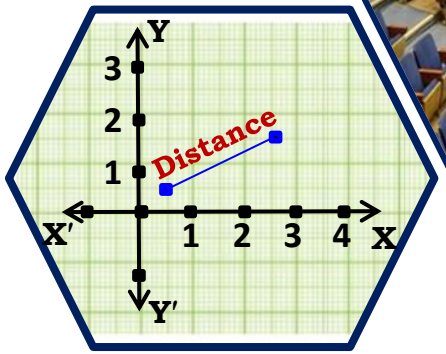
Module 1

Co-ordinate Geometry

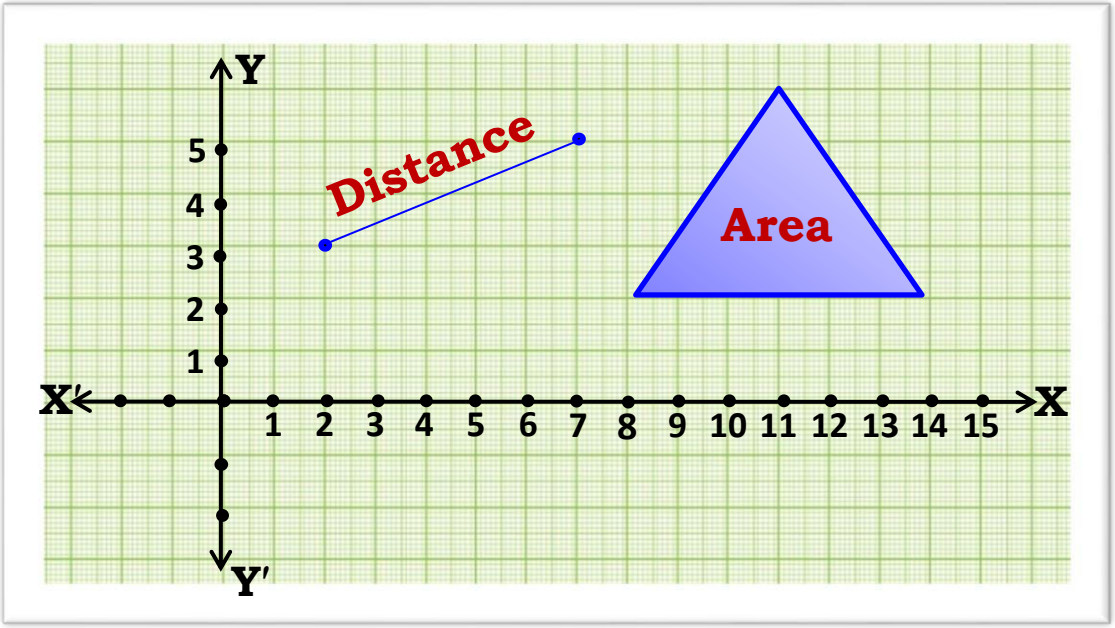




What is Co-ordinate Geometry ?

Co-ordinate geometry is a branch of mathematics which helps us to study the properties of Geometric figures by placing them on a Co-ordinate plane.

Example : Distance between points, Area of plane figures,…etc.



Let us understand the concept of co-ordinate plane

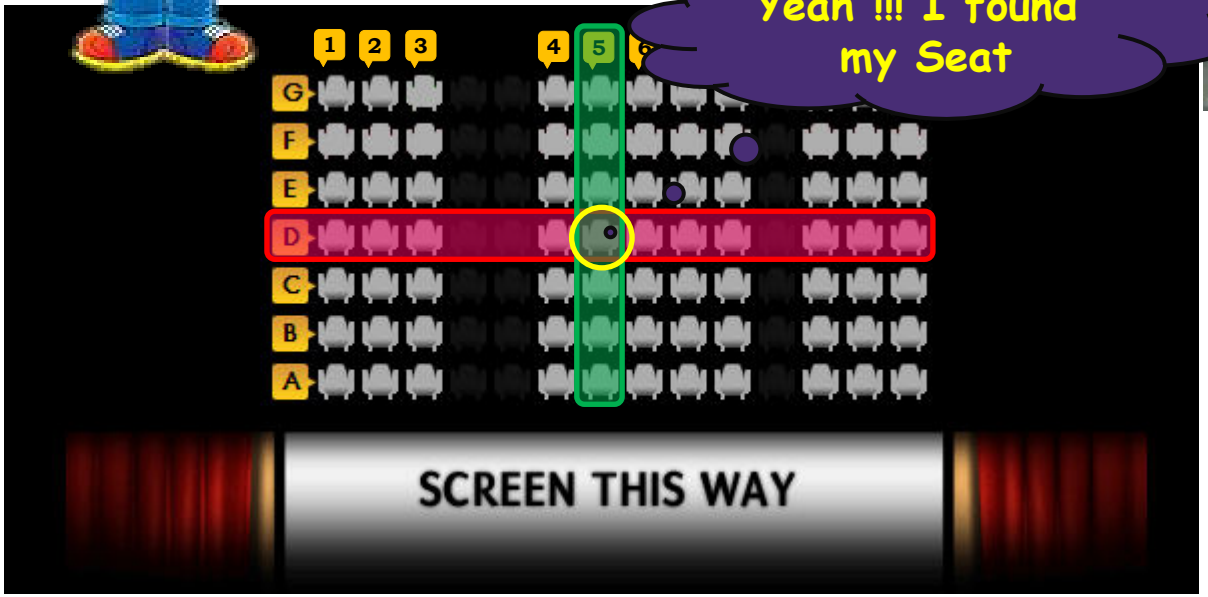
DEMONSTRATION

Si…le, my seat, I required 2 numbers
…te the position of any point in a
pla…ve requires 2 coordinates
- **…ordinate**
- **…ordinate**

How do I locate my seat ?

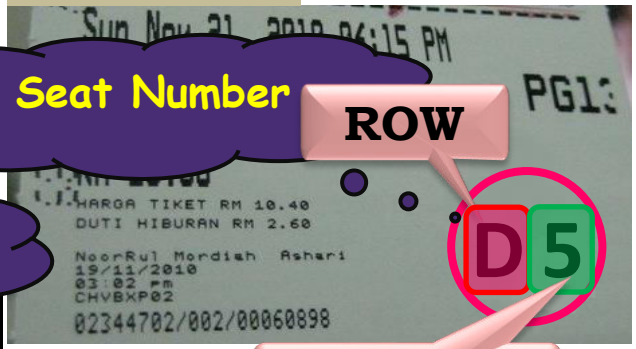
ROW NUMBER

COLUMN NUMBER



Yeah !!! I found my Seat

Movie Ticket



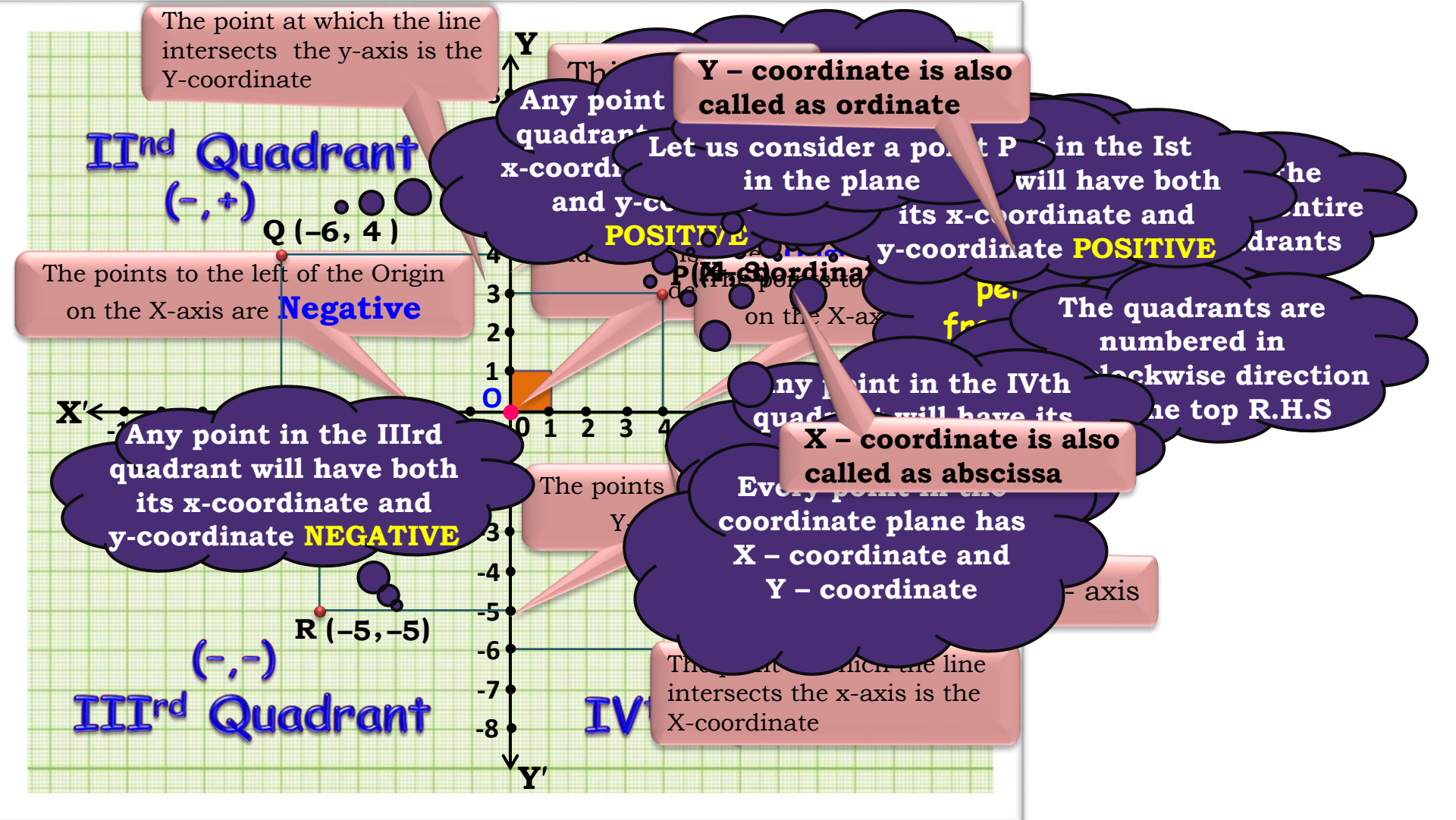
My Seat Number

ROW

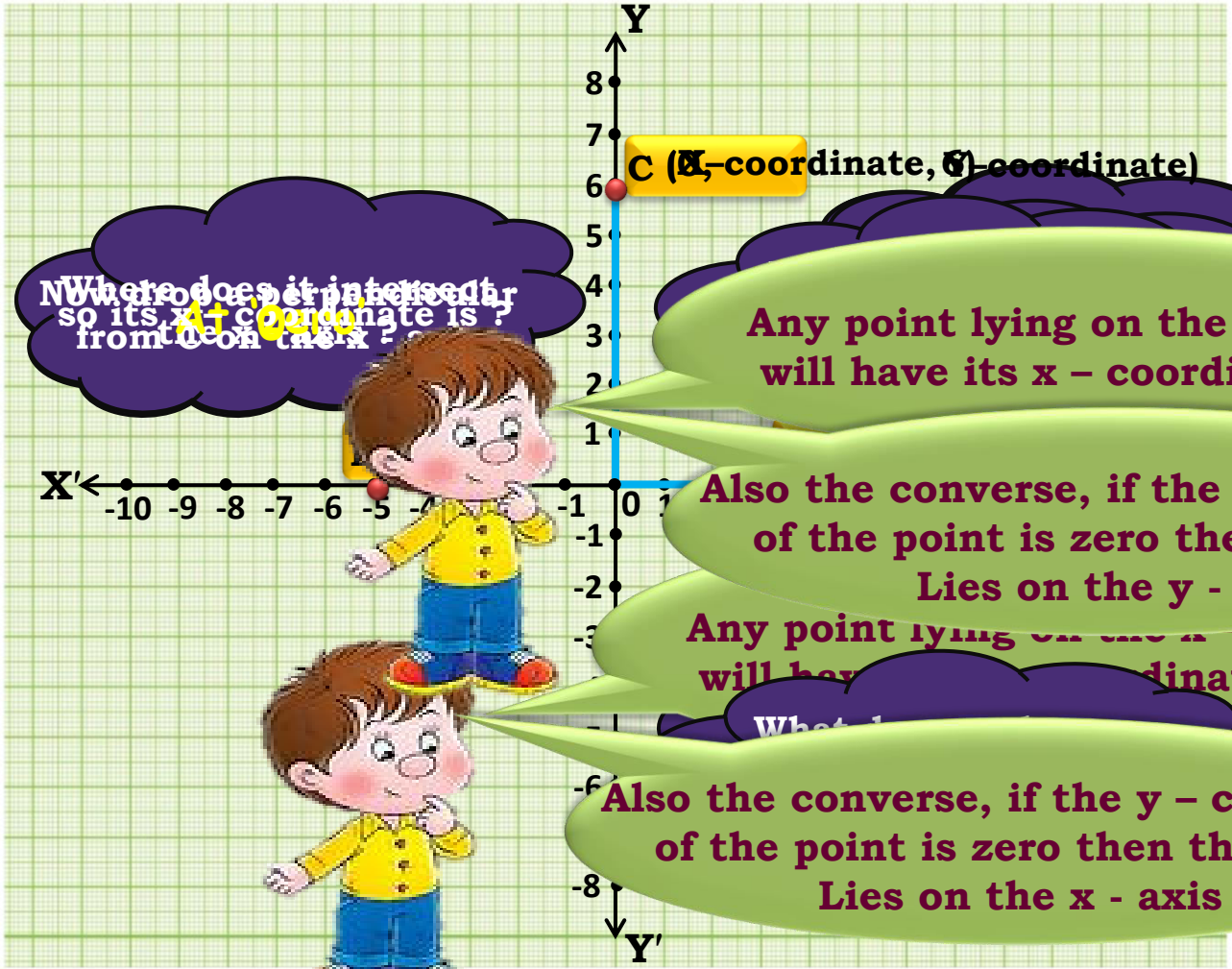
D 5

COLUMN

Module 2


The point at which the line intersects the y-axis is the Y-coordinate
Y – coordinate is also called as ordinate
Any point in the quadrant x-coordi and y-c POSITIVE
Let us consider a po in the plane
in the Ist will have both its x-c ordinate and y-coordinate POSITIVE
IInd Quadrant
(–,+)
Q (–6, 4)
The points to the left of the Origin on the X-axis are Negative
P(M
on th X-ax
The quadrants are numbered in ockwise direction e top R.H.S
ny int in the IVth quad will have its
X – coordinate is also called as abscissa
Any point in the IIIrd quadrant will have both its x-coordinate and y-coordinate NEGATIVE
The points
Every coordinate plane has X – coordinate and Y – coordinate
axis
R (–5, –5)
(–,–)
IIIrd Quadrant
IV
The line intersects the x-axis is the X-coordinate
Y
Y′
X′
O
1
2
3
4
-3
-4
-5
-6
-7
-8

Module 3


Y
8
7
6
5
4
3
2
1
X′
-10 -9 -8 -7 -6 -5
-1
0
-1
-2
-8
Y′
C (x-coordinate, y-coordinate)
Where does it intersect
so its x coordinate is ?
at origin
Any point lying on the y – axis
will have its x – coordinate ‘0’
Also the converse, if the x – coordinate
of the point is zero then the point
Lies on the y - axis
Any point lying on the x – axis
will have its y – coordinate ‘0’
Also the converse, if the y – coordinate
of the point is zero then the point
Lies on the x - axis

Module 4

Q. (i) Name the quadrants of the point (-3, -2), (2, -3), (2, 2), (-5, 2).

Soln: (i) In the point (–3, –2), abscissa is negative and ordinate is negative. So, it lies in the third quadrant.

(ii) In the point (2, –3), abscissa is positive and ordinate is negative. So, it lies in the fourth quadrant.

(iii) In the point (2, 2), abscissa is positive and ordinate is positive. So, it lies in the first quadrant.

(iv) In the point (–5, 2), abscissa is negative and ordinate is positive. So, it lies in the second quadrant.

What is the sign of its x co-ordinate ?

What is the sign of its y co-ordinate ?

What is the sign of its x co-ordinate ?

What is the sign of its y co-ordinate ?

So, the point (-5, 2) lies in which quadrant ?

IInd Quadrant

(ii) Which of the following points will lie on X- axis or Y- axis?

A(0, 2), B(5, 0), C(4.5, 0), D (0, 3.2).

Soln : (i) The point (0, 2) lies on the y - axis.

(ii) The point (5, 0) lies on the x - axis.

(iii) The point (4.5, 0) lies on the x - axis.

(iv) The point (0, 3.2) lies on the y - axis.

Its x co-ordinate is zero

Its y co-ordinate is zero

Its y co-ordinate is zero

So, the point (0, 3.2) lies on which axis ?

y -axis

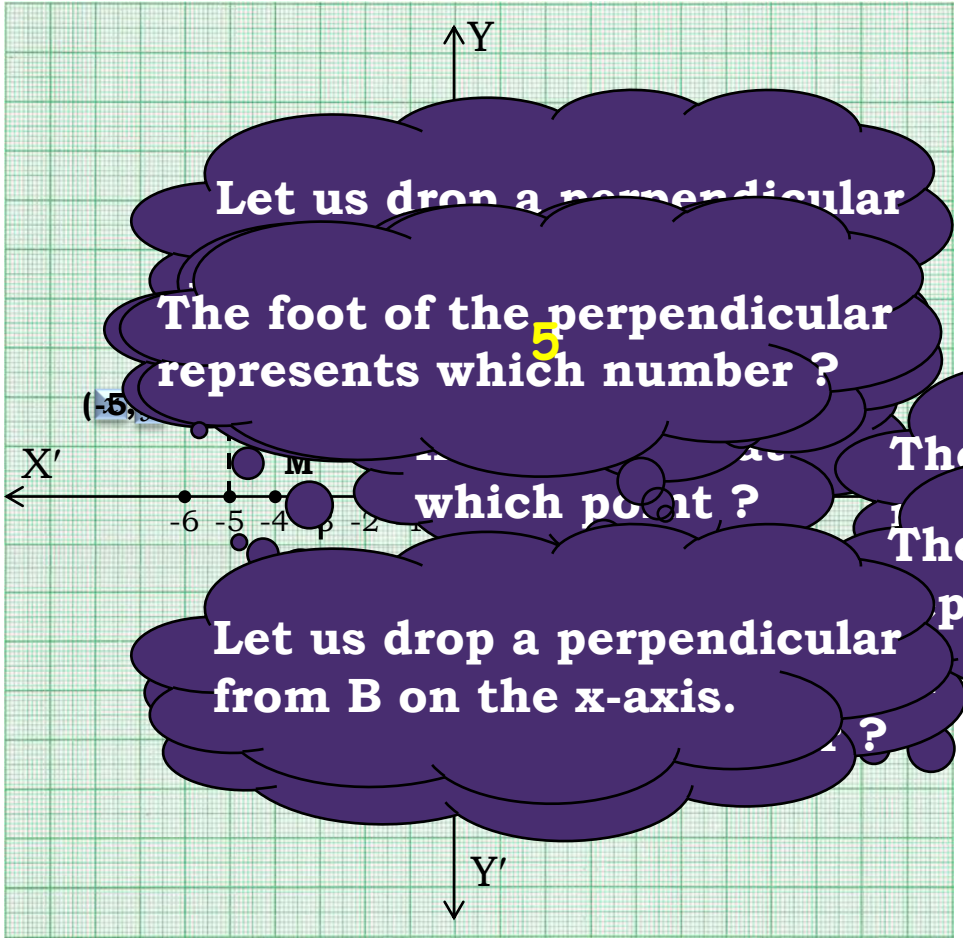
So, the point (4.5, 0) lies on which axis ?

X -axis

Thank You

Module 5

Q. See figure, and write the following :



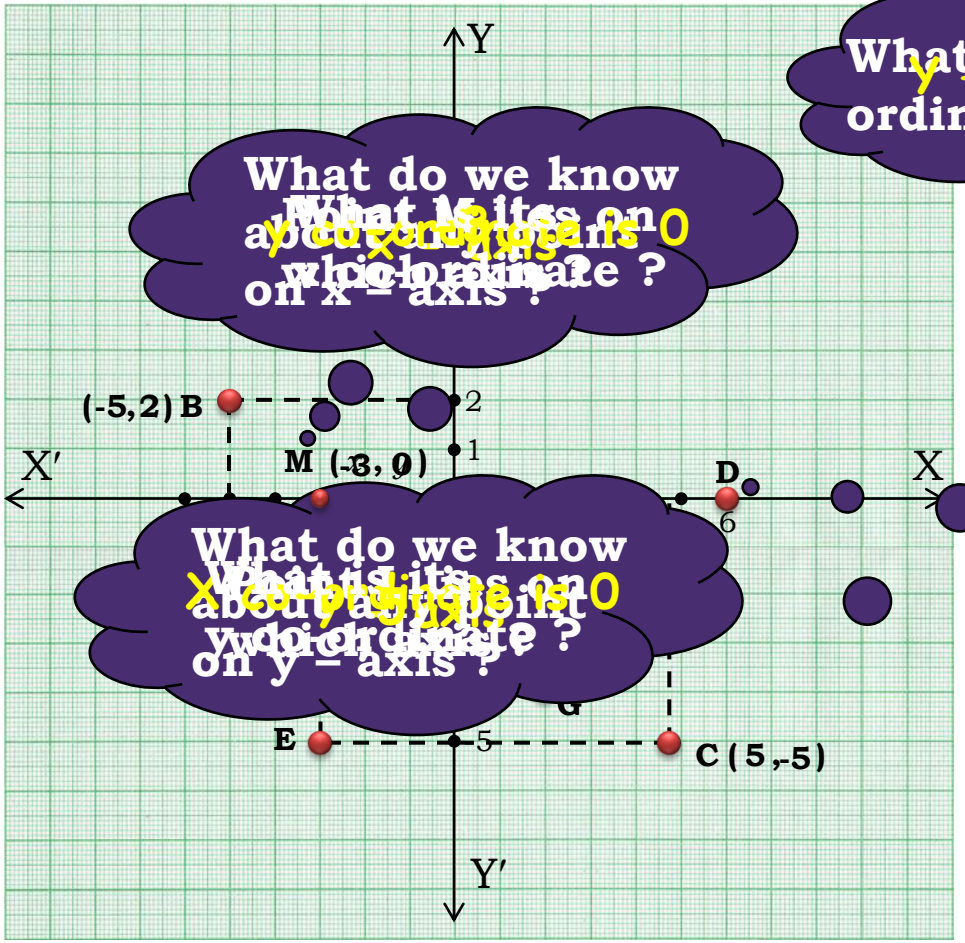
(i) The co-ordinates of B.

Soln: The coordinates of B are (–5, 2).

(ii) The co-ordinates of C.

Soln: The coordinates of C are (5, –5).

identified by the point G.



What do we mean by ordinate ?

y – co-ordinate

of the point D.

sa of the point D is 6.

(vi) The H.

Soln: s – 3.

What do we mean by abscissa ?

X – co-ordinate

(vii) The coordinates of point L.

Soln:

What is its y co-ordinate?

-3

(viii) coordinates of the point M.

Soln: The coordinates of the point M are (–3, 0).

Module 6

Q. In which quadrant or ... each of the points (–2 , 4), (3 , –1) (–1 , 0) ... –3 , –5) lie?

What is the sign of its y ... +

What is the ... –

Its y co-ordinate is zero

But the x co-ordinate is negative

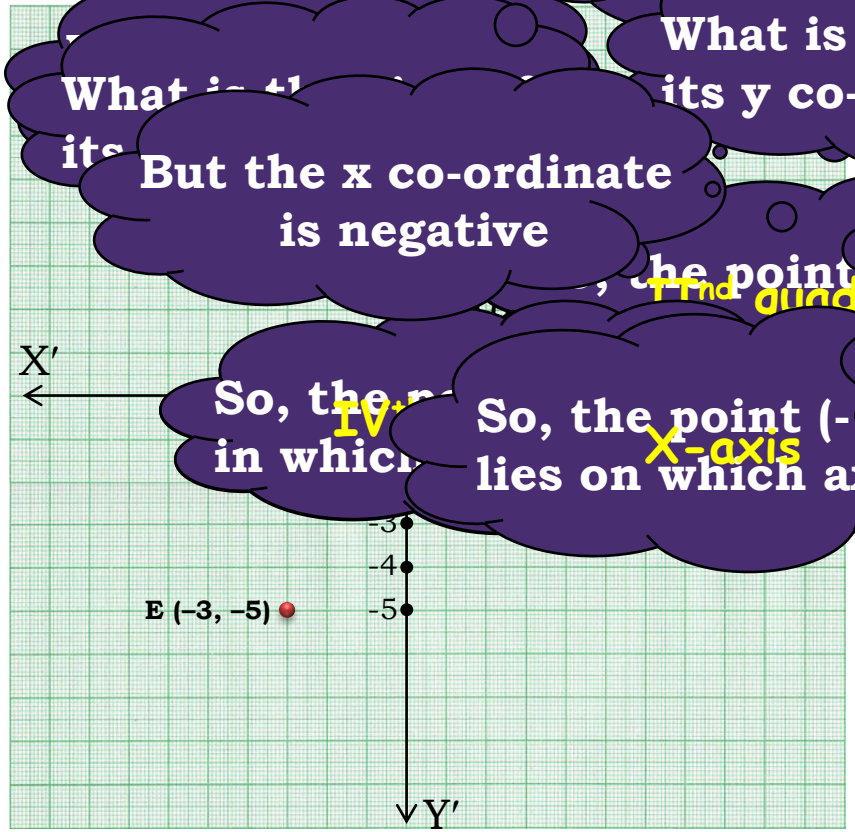
... abscissa is ... te is positive. ... second quadrant.

... the point (-2 ... 1), abscissa is ... nate is negative. ... fourth quadrant.

IV

So, the point (- ... lies on which axis ? X-axis

So the point lies on which axis ? Negative X-axis



Soln: (iii) The point (–1, 0) lies on the negative x - axis.

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

What is the sign of its y co-ordinate ?

What is the sign of its x co-ordinate ?

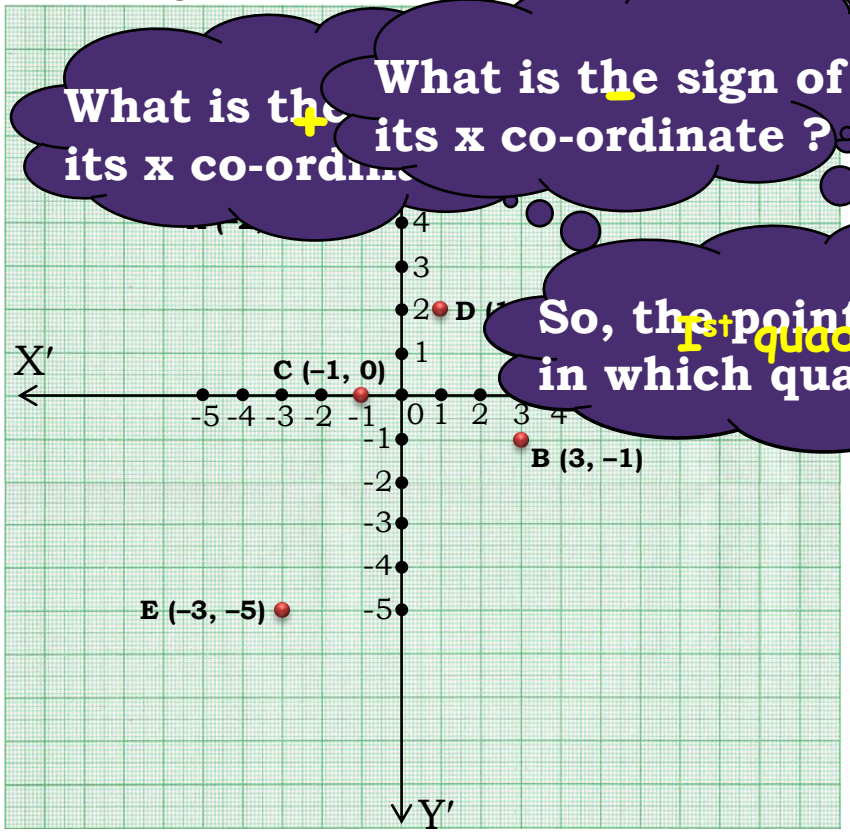
What is the sign of its x co-ordinate ?

So, the point (1, 2) Lies in which quadrant ?

1st quadrant

So, the point (-3, -5) Lies in which quadrant ?

IIIrd quadrant



In: (iv) In t… abscissa and …quadrant.

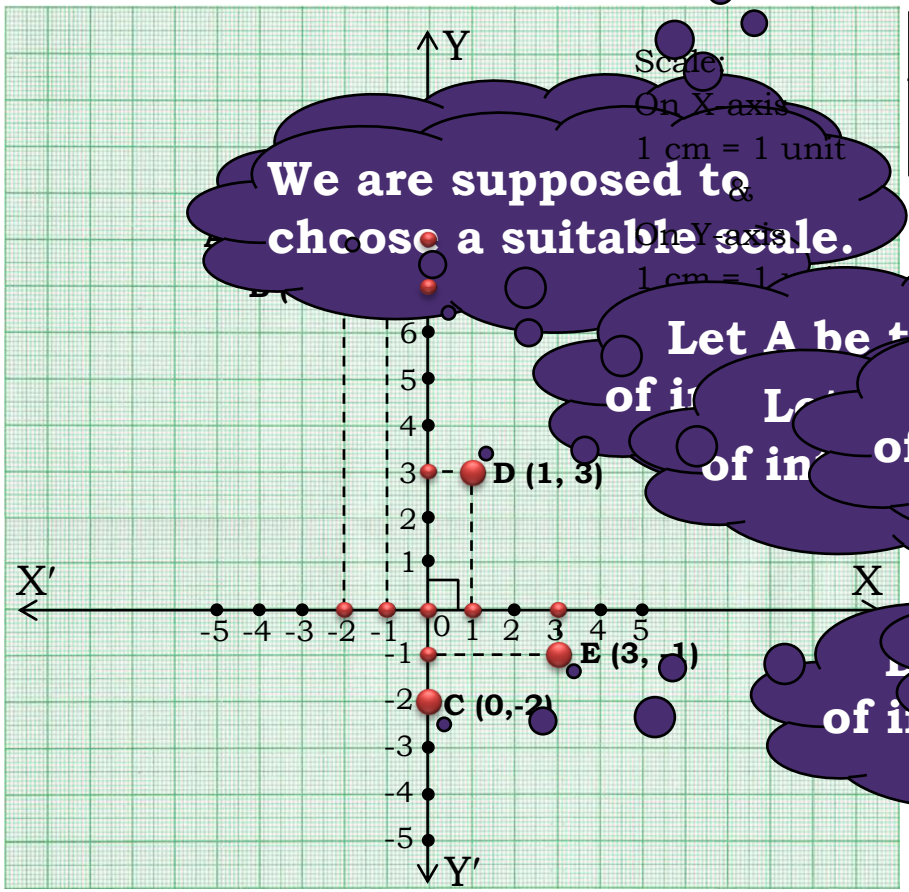
…the point (–3, – 5) abscissa and ordinate are negative.

So , it lies in the third quadrant.

Module 7

Q. Plot the points (x, y) given in the following table on the plane, choosing suitable units of distance on the axes.

x	– 2	– 1	0	1	3
y	8	7	–2	3	– 1



We are supposed to choose a suitable scale.

Let A be the point of intersection of (–2,8)

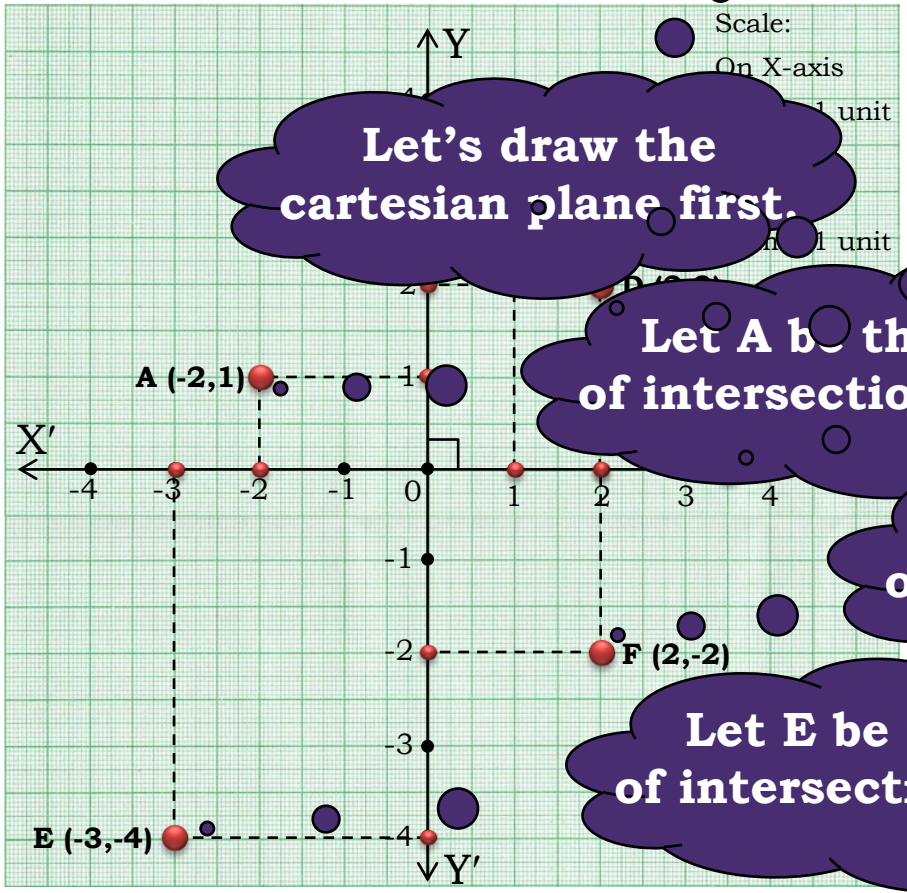
Let D be the point of intersection of (1,3)

Let E be the point of intersection of (3,-1)

Module 8

Q. Plot the points (x, y) given in the following table on the plane, Use the scale 2cm = 1 unit on the axis.

x	– 2	3.5	1	2	– 3	2
y	1	0	3	2	– 4	– 2



Let's draw the cartesian plane first.

Let A b th of intersection

Let C be the point

Let D be the point of intersection of (2,2)

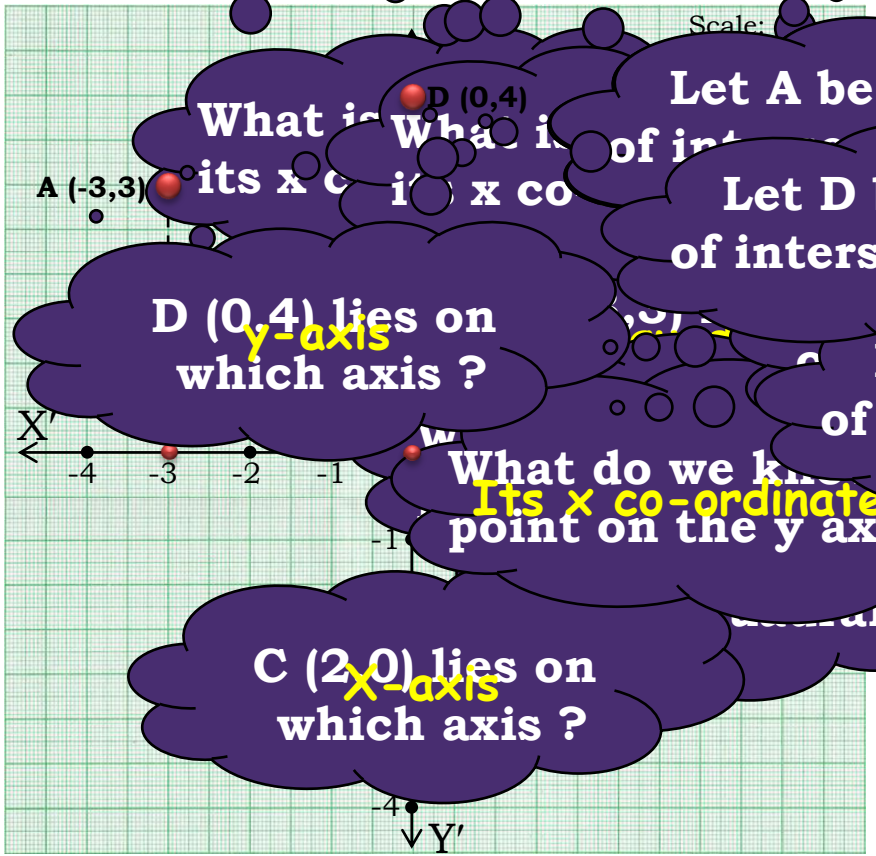
Let F be the point of intersection of (2,-2)

Let E be the point of intersection of (-3,-4)

Thank You

Module 9

Q. In which quadrant (s) or on which axis do each of the points (–3 , 3), (2 , 1), (2 , 0), (0 , 4), (–2 , –3) and (4 , –3) lie? Verify your answer by locating them on the Cartesian plane.



What is its x co

What is its x co

Let A be the point of int zero

Let D be the point of intersection of (0,4)

D (0,4) lies on which axis ?

y-axis

Let C be the point of intersection of (2,0)

What do we kn point on the y axis ?

Its x co-ordinate is 0

C (2,0) lies on which axis ?

X-axis

So, the point (0,4) lies on which axis ?

y-axis

of , abscissa is nate is positive. scale the second quadrant.

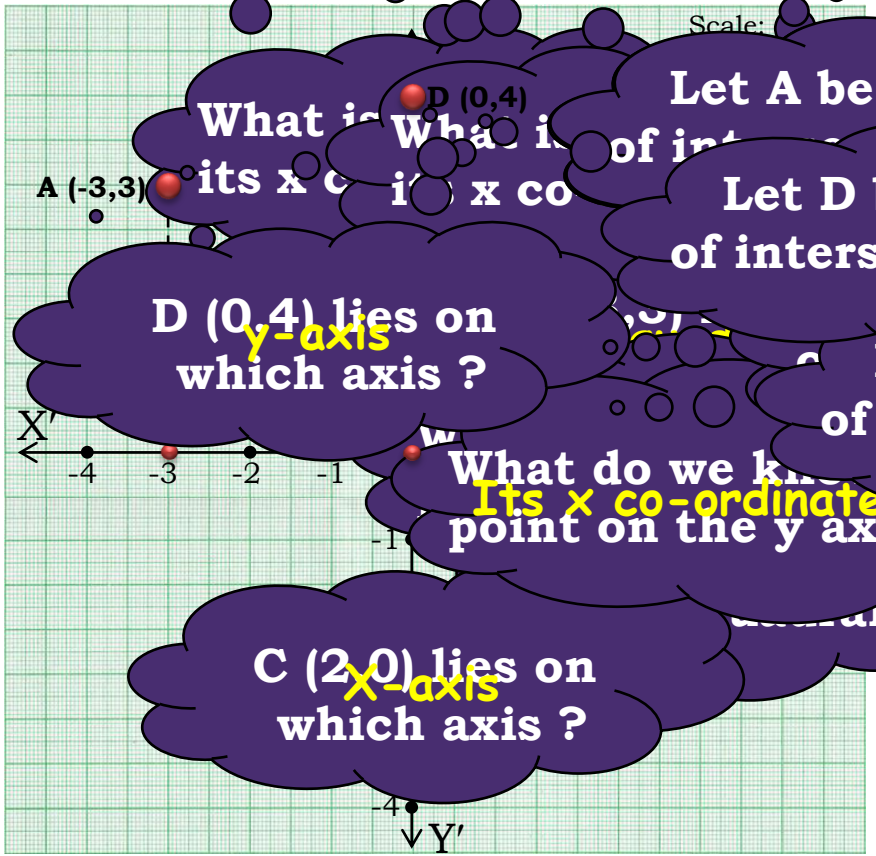
1), abscissa is nate is positive. first quadrant.

The point (2, 0) lies on the

Soln: (iv) The point (0,4) lies on the y - axis.

Module 10

Q. In which quadrant (s) or on which axis do each of the points (–3 , 3), (2 , 1), (2 , 0), (0 , 4), (–2 , –3) and (4 , –3) lie? Verify your answer by locating them on the Cartesian plane.



What is its x co

What is its x co

Let A be the point of int zero

Let D be the point of intersection of (0,4)

D (0,4) lies on which axis ?

y-axis

Let C be the point of intersection of (2,0)

What do we kn point on the y axis ?

Its x co-ordinate is 0

C (2,0) lies on which axis ?

X-axis

So, the point (0,4) lies on which axis ?

y-axis

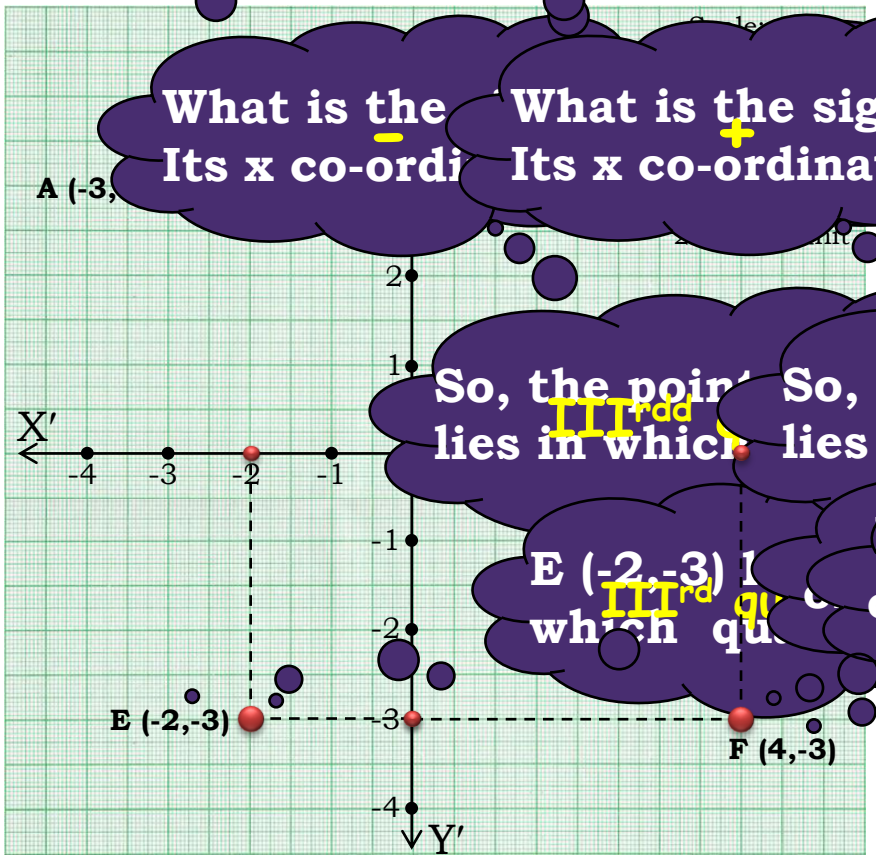
of , abscissa is nate is positive. scale the second quadrant.

1), abscissa is nate is positive. first quadrant.

The point (2, 0) lies on the

Soln: (iv) The point (0,4) lies on the y - axis.

(–2 , –3) and (4 , –3)



What is the
Its x co-ordi

What is the sign of
Its x co-ordinate ?

What is the sign of
Its y co-ordinate ?

scissa is
is negative.
third quadrant.

Soln: (vi) In the point (4, –3), abscissa is
positive and ordinate is negative.
So, it lies in the fourth quadrant.

So, the poin
lies in which

III^rdd

So, the point
lies in which quadrant ?

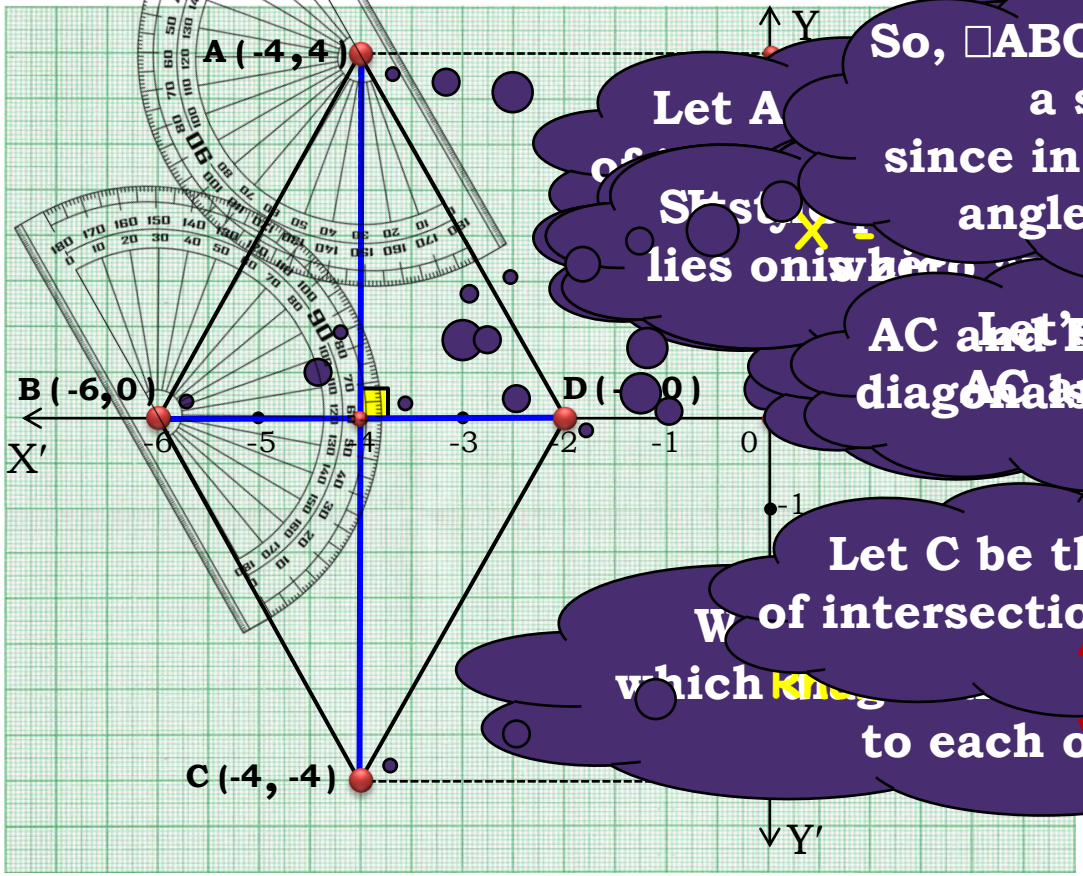
IV^th quadrant

E (-2,-3)
III^rd qu
which qu

Let F be the point
of intersection of (4,-3)

Module 11

Q. Draw the quadrilateral with vertices (-4,4), (-6,0), (-4,-4), (-2,0).
Name the type of quadrilateral.



Let A

So, □ABCD cannot be a square since in a square all angles are 90°

plot the
linate first
able scale

lies on

AC and BD are the diagonals of □ABCD

Let's join AC and BD

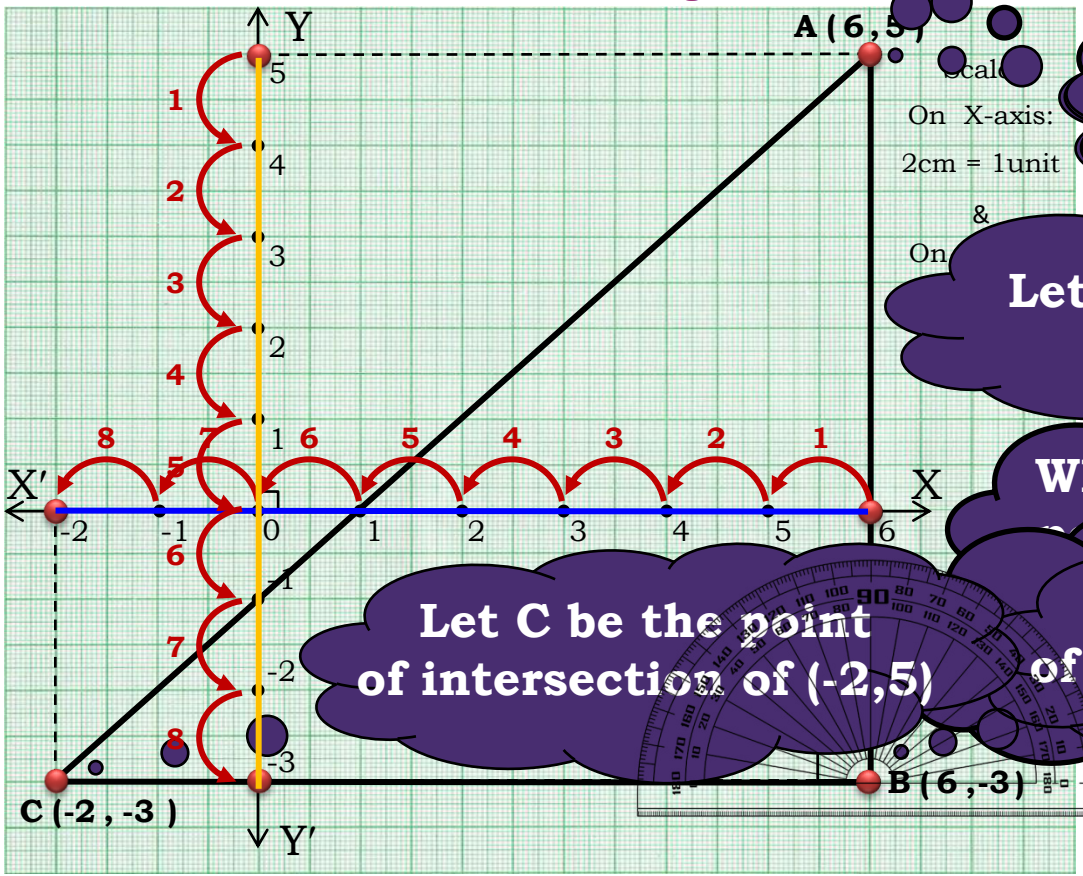
Let C be the point of intersection of (-4,-4)

which

to each other ?

Module 12

Q. Plot the point (6 , 5), (6 , -3), and (-2 , -3).
Join them to find the figure and its area.



Let A be the point of intersection of (6,5)

Let's join the points A, B and C

Let C be the point of intersection of (-2,5)

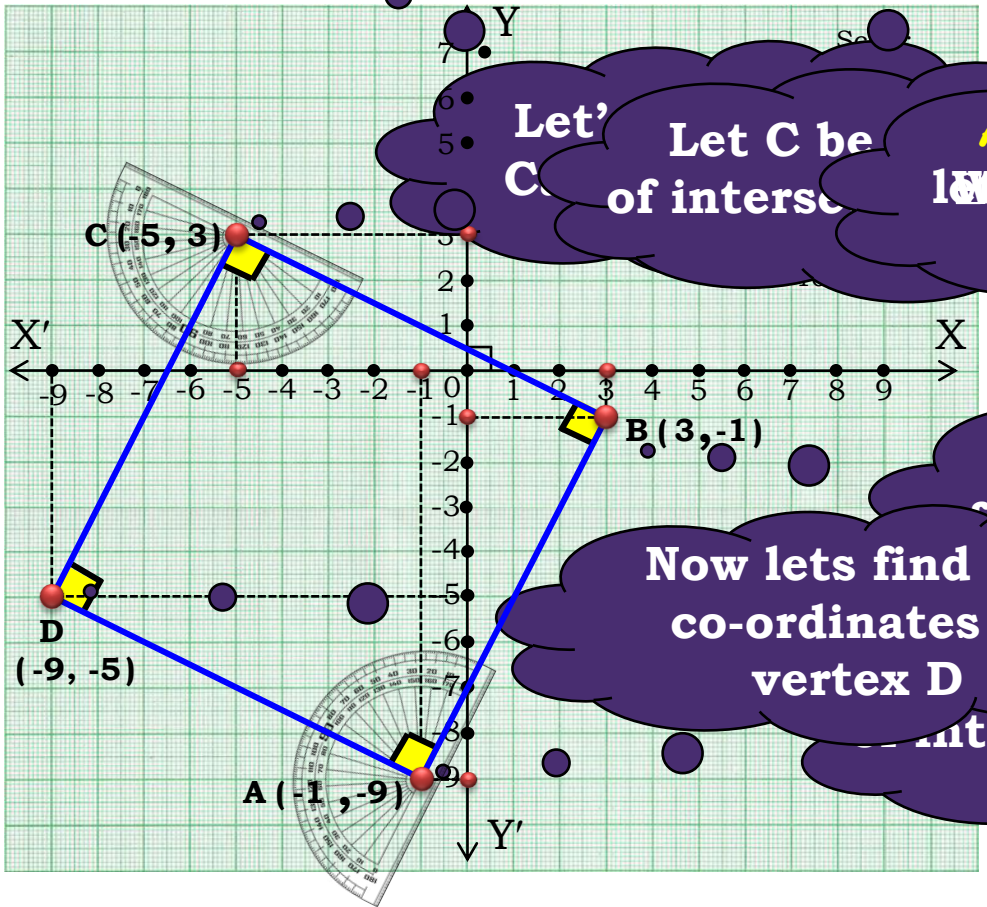
Let B be the point of intersection of (6,-3)

Which are the

Area (A ABC) = 32 cm²

Module 13

Q. Three vertices of a square are A(-1,-9), B(3,-1), and C(-5,3) Plot the points and find the co-ordinates of the missing vertex D.



Let's

Let C be
of intersc

A quadrilateral in
[illegible] are 90°

Now let's plot
inate
ble scale

Let B be the point
section of (3,-1)

Now lets find the
co-ordinates of
vertex D

the point
ntersection of (-1,-9)

Thank You