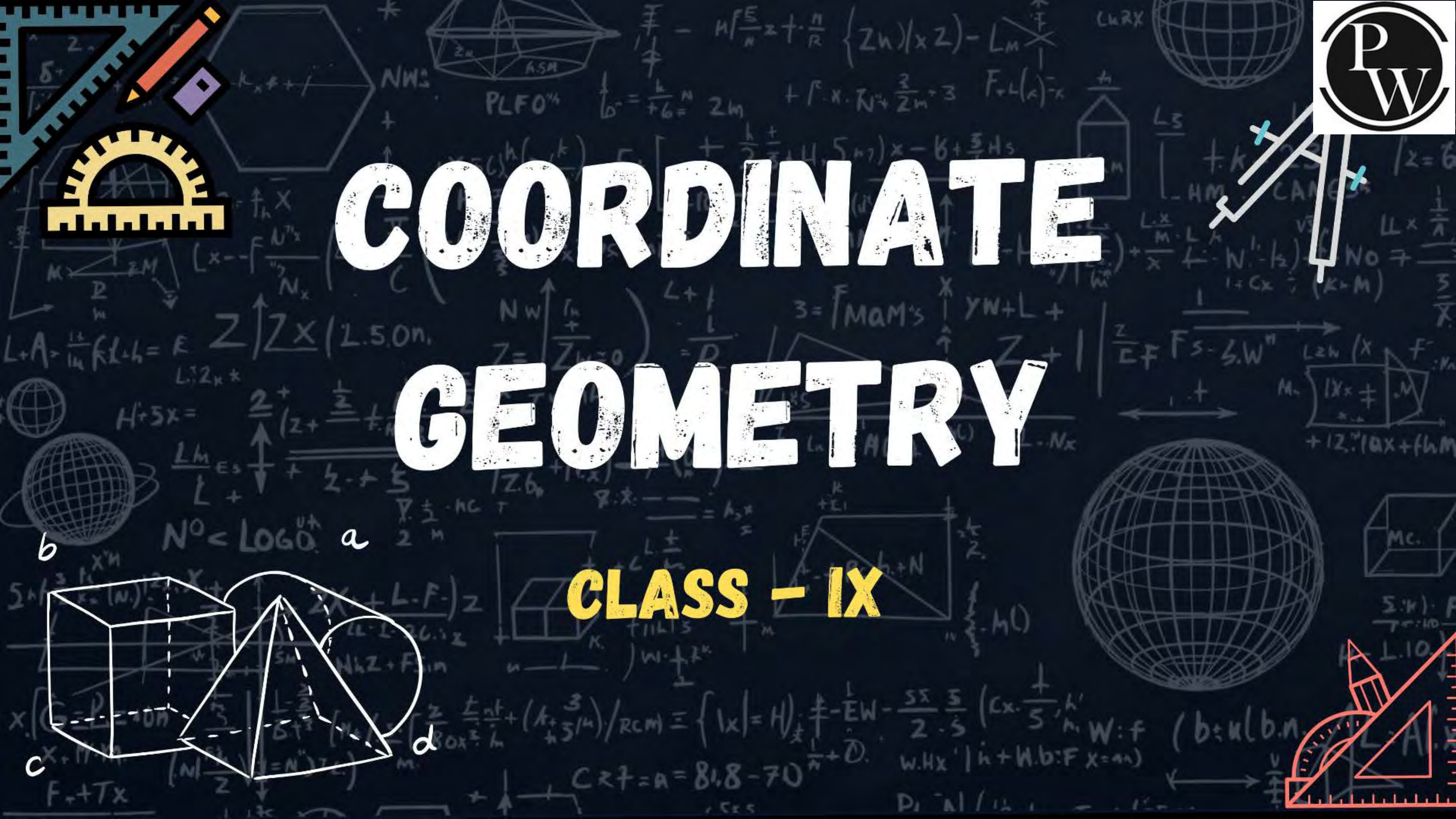




COORDINATE GEOMETRY

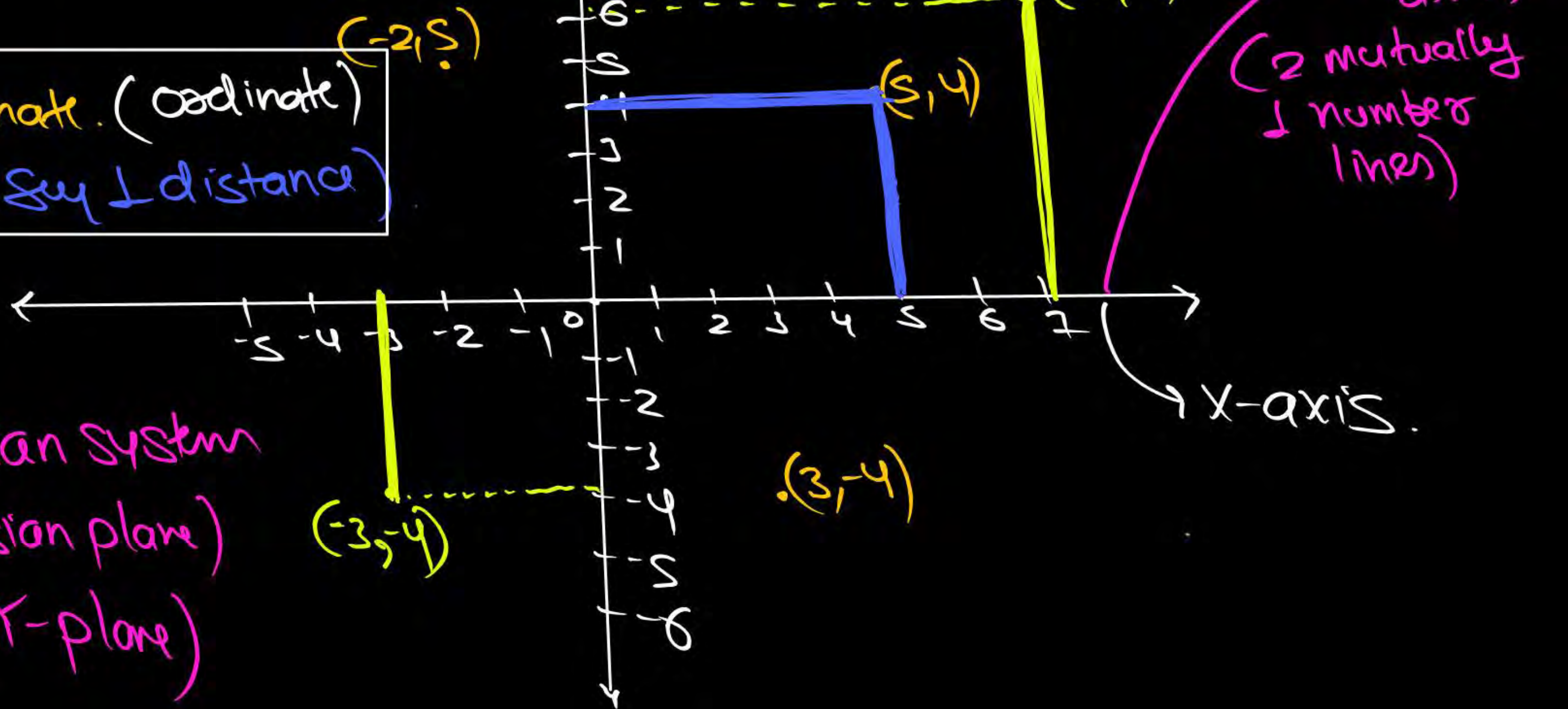
CLASS - IX

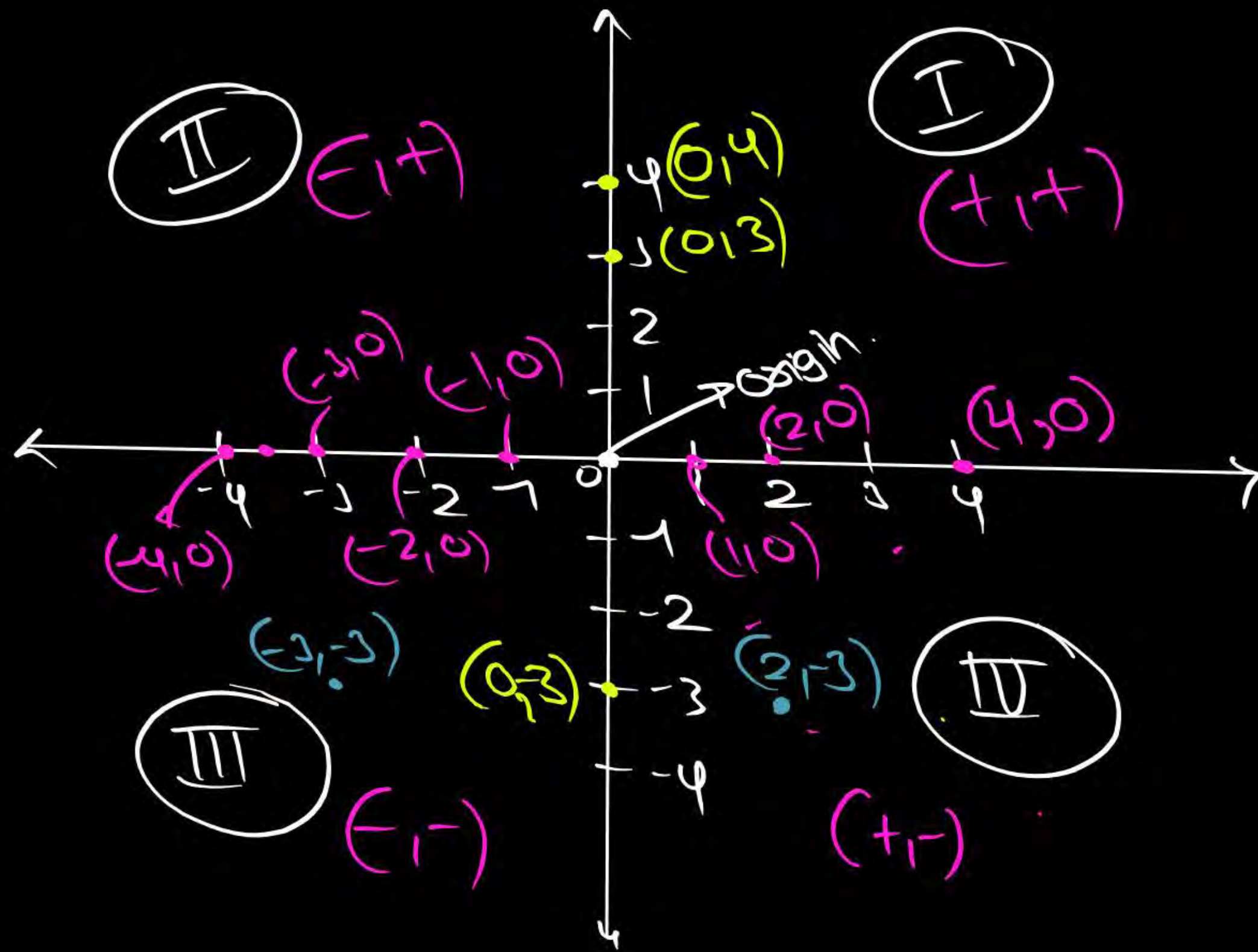


x-coordinate (abscissa)
(y-axis seg ⊥ distance)

y-coordinate (ordinate)
(x-axis seg ⊥ distance)

Cartesian system
(Cartesian plane)
(XY-plane)







Coordinate Geometry

Coordinate geometry is the branch of Mathematics in which we study the position of any object lying in a plane, with the help of two mutually perpendicular lines in the same plane. This study was initially developed by the French Philosopher and Mathematician Rene Descartes (1596-1650).





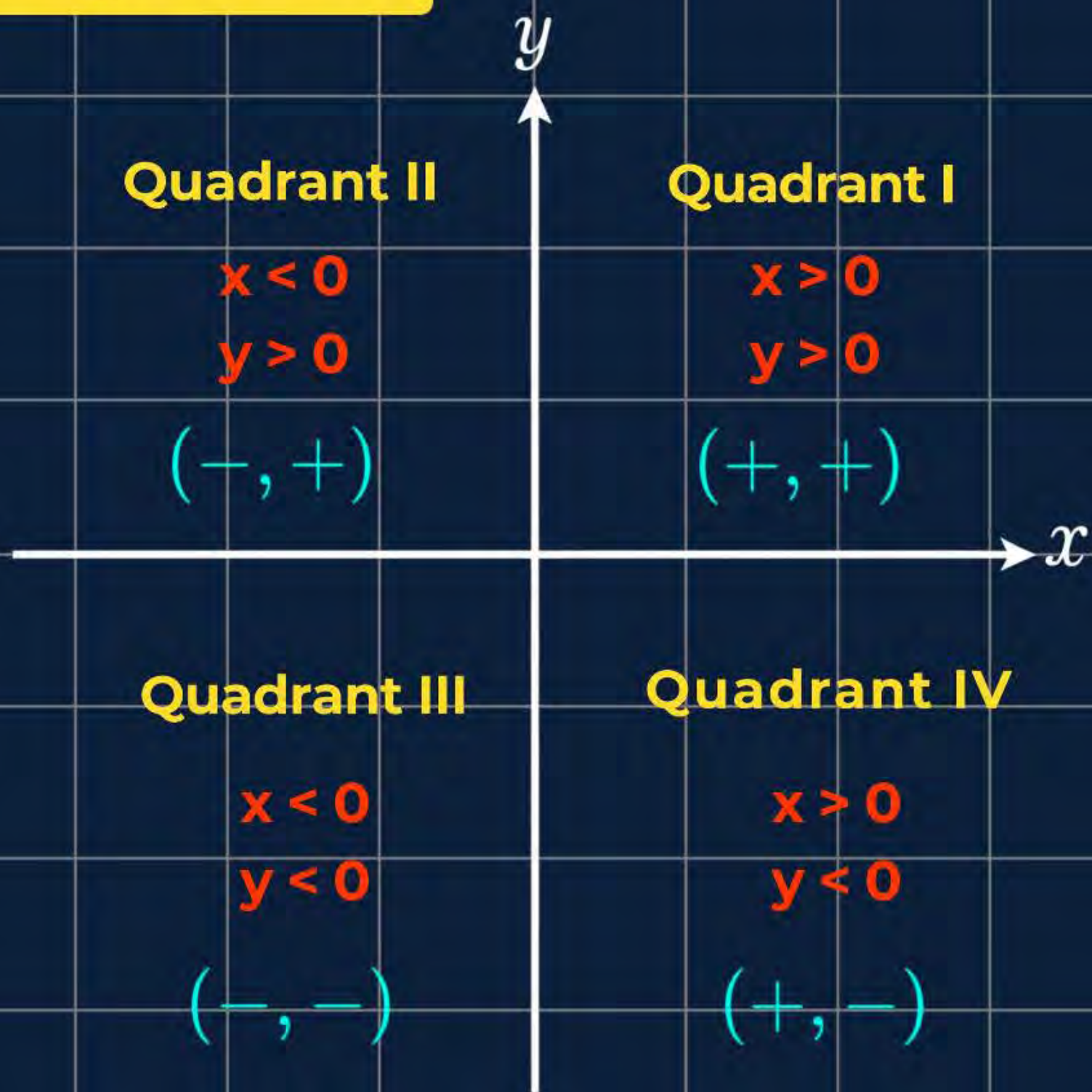
Cartesian System

In cartesian system, there are two perpendicular straight. The plane is known as **XY-plane** or **Cartesian plane** or **coordinate plane** and the axes are known as the **coordinate axes**.

Quadrant	Nature of x and y coordinates	Sign of x-coordinate	Sign of y-coordinate	Sign of Coordinates of a point
I	$x > 0, y > 0$	+	+	(+, +)
II	$x < 0, y > 0$	-	+	(-, +)
III	$x < 0, y < 0$	-	-	(-, -)
IV	$x > 0, y < 0$	+	-	(+, -)



Cartesian System





Cartesian System

The **x-coordinate** and **y-coordinate** taken together are called **cartesian coordinates** or **coordinates of a point** and it is denoted by (x, y) . Here, the x-coordinate comes first and y-coordinate comes second, so (x, y) is called an **ordered pair**.

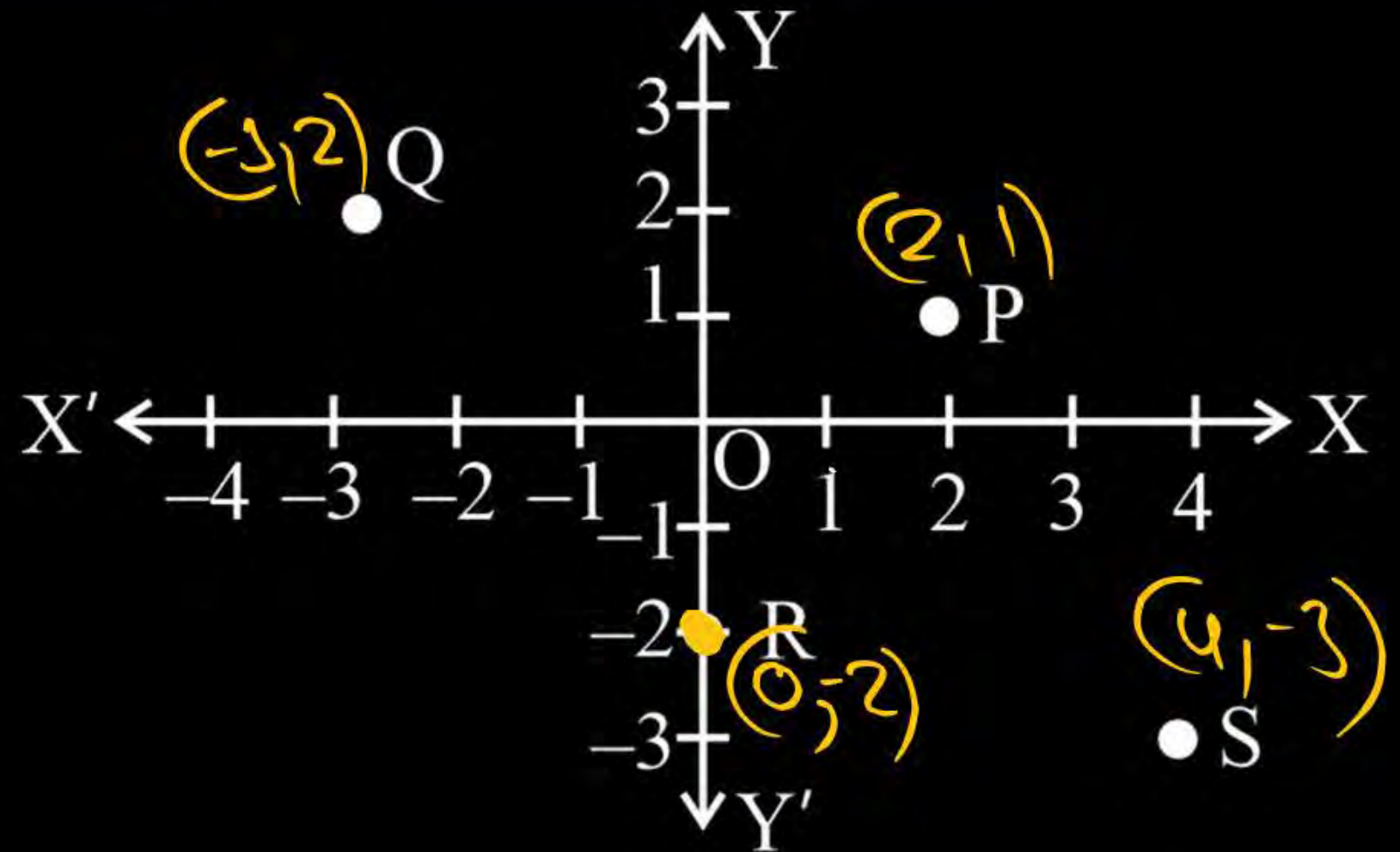
Coordinates describe a point in the plane uniquely i.e. point (a, b) is not same as (b, a) .





QUESTION

Write the coordinates of the points given in the following graph

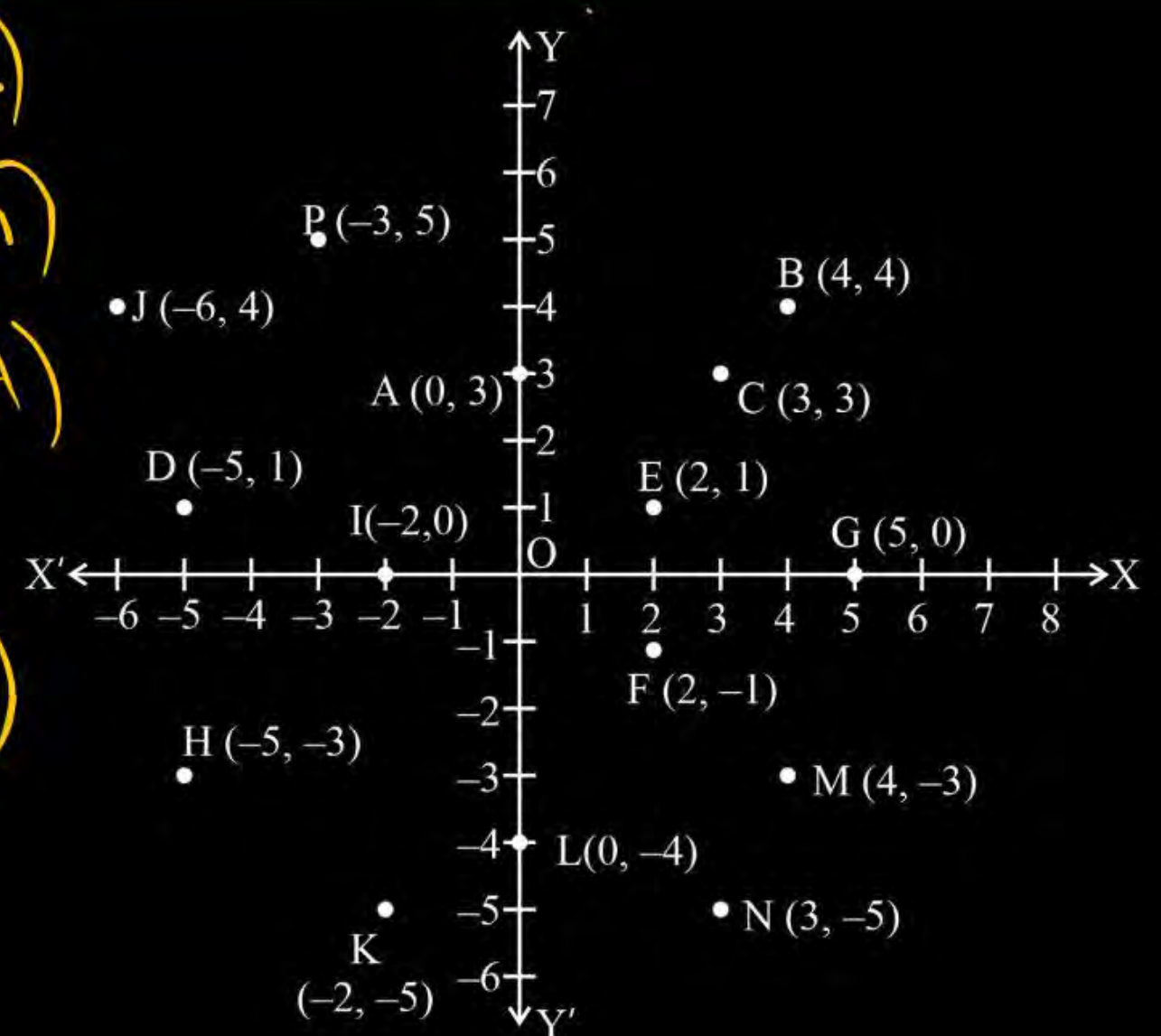




QUESTION

From the given figure, answer the following questions.

- y-coordinate* *x-coordinate*
- (i) Write the points whose abscissa is 0. *(A, L)*
 - (ii) Write the points whose ordinate is 0. *(I, G)*
 - (iii) Write the point whose abscissa is -5. *(D, H)*
 - (iv) Write the point whose ordinate is 4. *(J, B)*





QUESTION

In which quadrant or on which axis each of the following points lie?

1 $(-3, 5)$ II

2 $(4, -1)$ IV

3 $(2, 0)$ x-axis

4 $(2, 2)$ I

5 $(-3, -6)$ III



QUESTION

A point whose coordinates are both negative will lie in

A

I quadrant

B

II quadrant

C

III quadrant

D

IV quadrant



QUESTION

The point $A(a, b)$ lies in II quadrant. Find which of a or b is greater?

A

a

B

b

C

both are equal

D

$a \neq b$





QUESTION

The perpendicular distance of a point from Y-axis is known as

A intersection point

B origin

C abscissa

D ordinate



QUESTION

Abscissa of all the points on the X-axis is

A

0

B

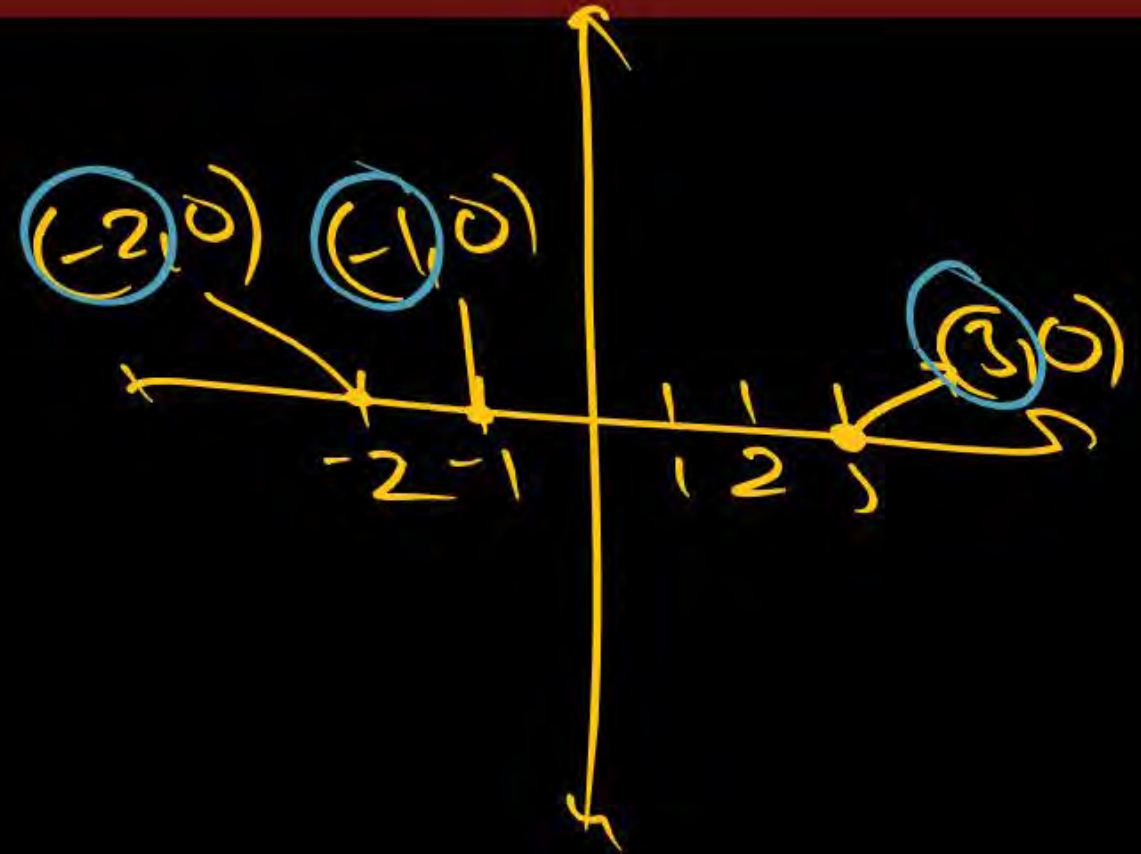
1

C

2

D

any number

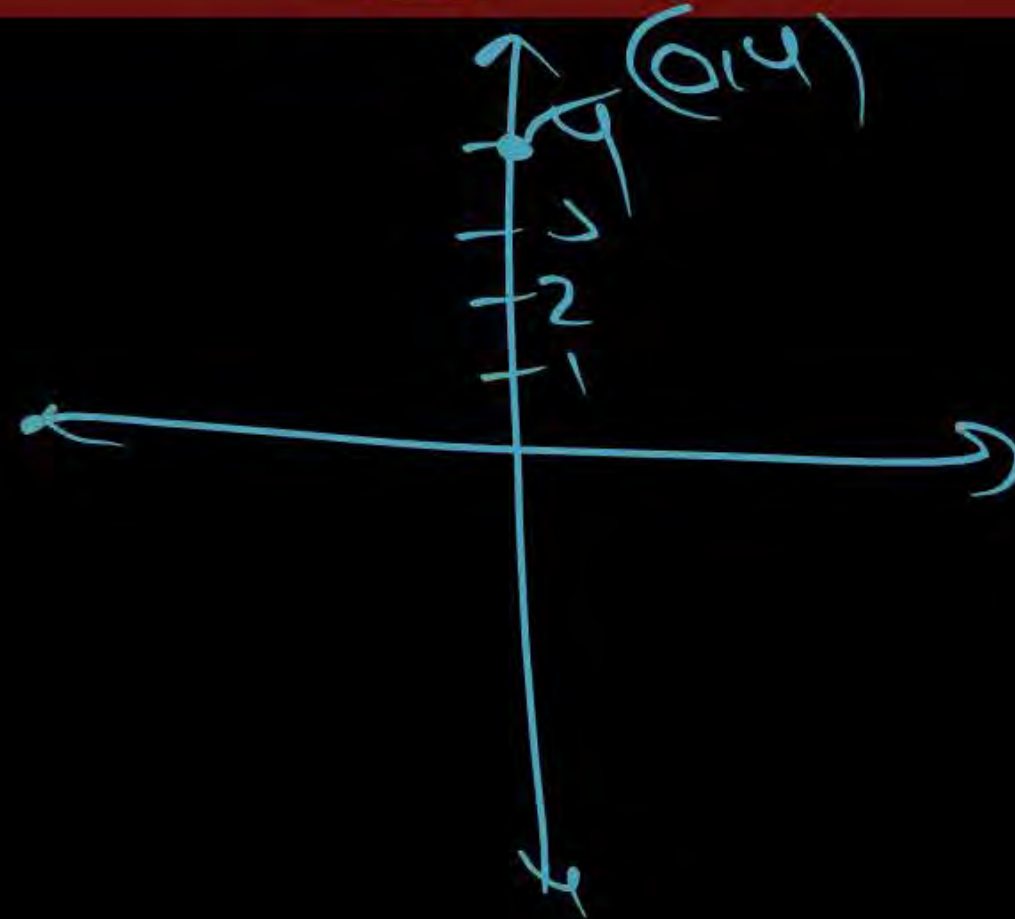




QUESTION

The point whose ordinate is 4 and which lies on Y-axis is

$(0, 4)$



A

$(4, 0)$

B

$(0, 4)$

C

$(1, 4)$

D

$(4, 2)$



QUESTION

The point which lies on Y-axis at a distance of 5 units in the negative direction of Y-axis is

A

(0, 5)

B

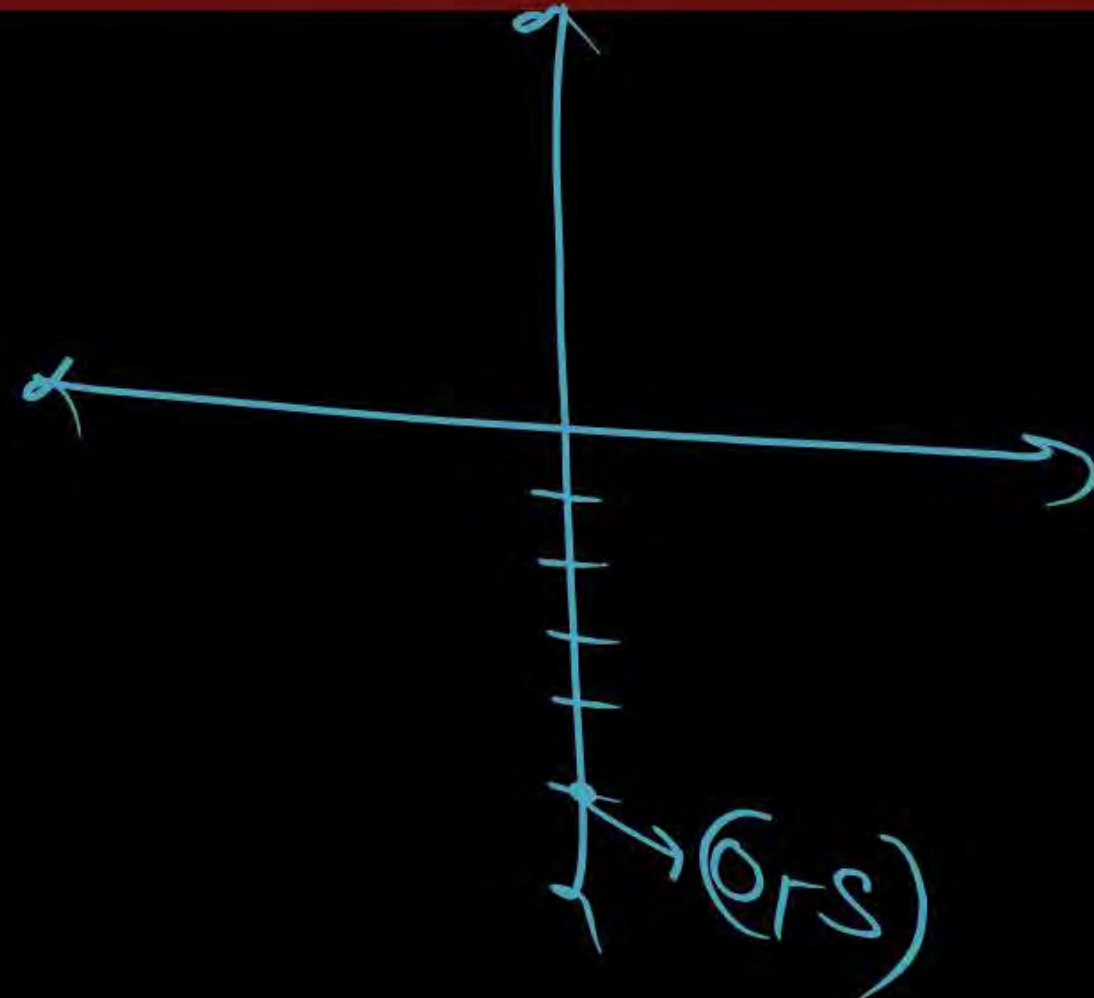
(5, 0)

C

(0, -5)

D

(-5, 0)





QUESTION

If the coordinates of the two points are $P(-2, 3)$ and $Q(-3, 5)$, then (Abscissa of P) - (Abscissa of Q) is

A

5

$$= (-2) - (-3)$$

B

1

$$= -2 + 3$$

$$= 1$$

C

-1

D

-2



QUESTION

If the coordinates of the two points are A(4, 5) and B(-3, 6), then (Abscissa of A) - (Abscissa of B) is

A

3

B

5

C

~~5~~ 7

D

9

$$\begin{aligned} &= (4) - (-3) \\ &= 4 + 3 = 7 \end{aligned}$$



QUESTION

The coordinates of points P and Q are $(-5, 3)$ and $(-5, m)$, respectively. And if sum of abscissa and ordinate of both points are equal. Then, the possible value of m is:

A

-5

B

-13

C

-10

D

3

$$-5 + -5 = 3 + m$$

$$-10 = 3 + m$$

$$-13 = m$$



QUESTION

Find the distance of point $B(3, -5)$ from X-axis.

A

3

B

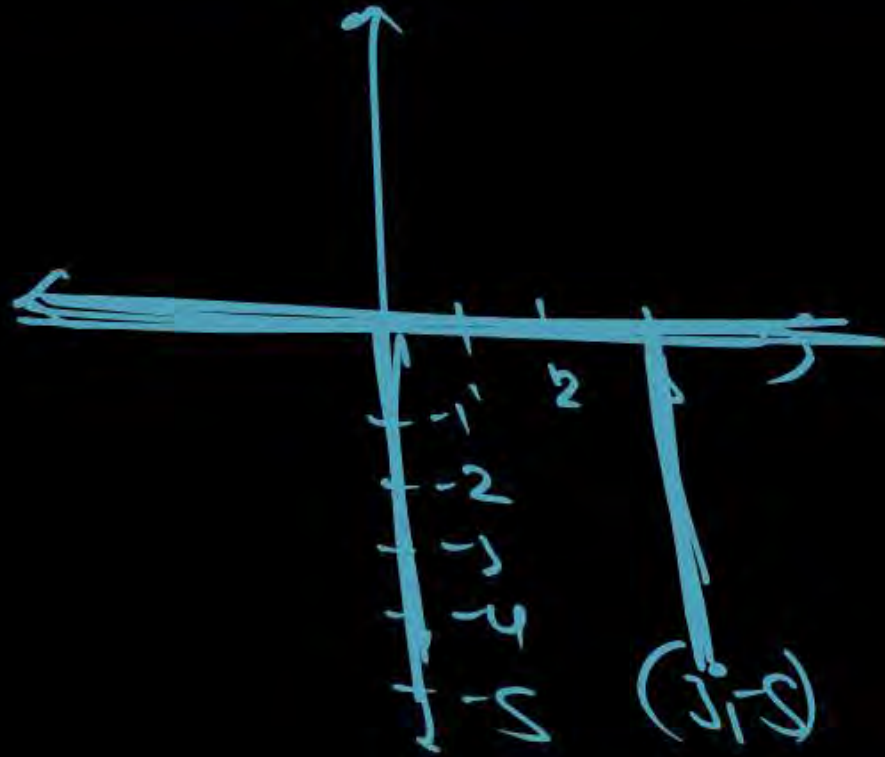
5

C

4

D

8





QUESTION

Find the distance of point C(8, 9) from Y-axis.

A

7

B

8

C

9

D

1



QUESTION

Which of the following points lie on Y-axis?

A

$(6, 0)$

B

$(3, 0)$

C

$(0, 7)$

D

$(3, 2)$



QUESTION

The area of the figure formed by joining the point $A(4, 4)$, $B(4, -4)$, $C(-4, -4)$ and $D(-4, 4)$ in order, then area of the figure formed is:

A

16 sq. units

B

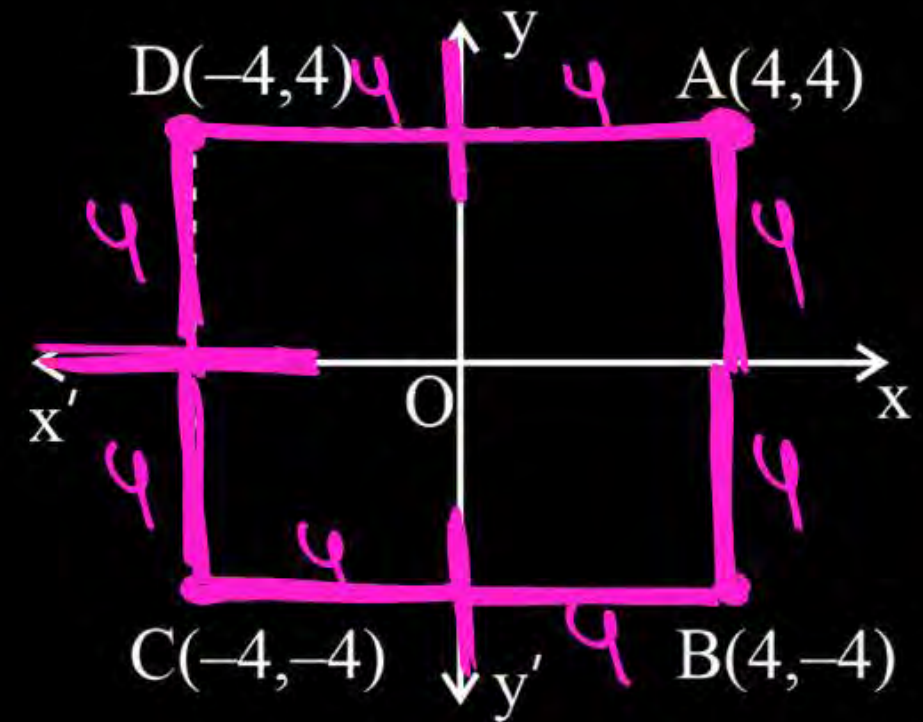
32 sq. units

C

64 sq. units

D

48 sq. units





QUESTION

The reflection of the point $P(-4, 5)$ in y -axis has the coordinates

A

$(-4, -5)$

B

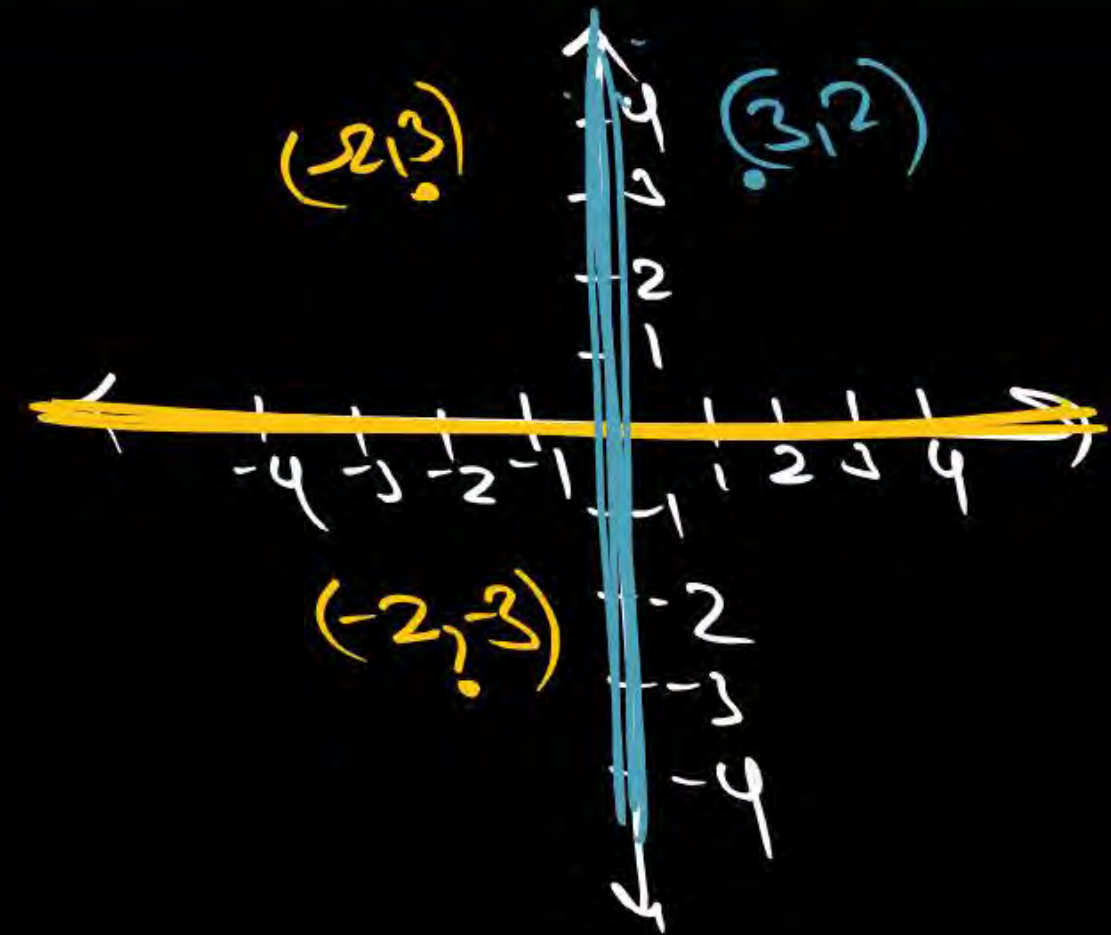
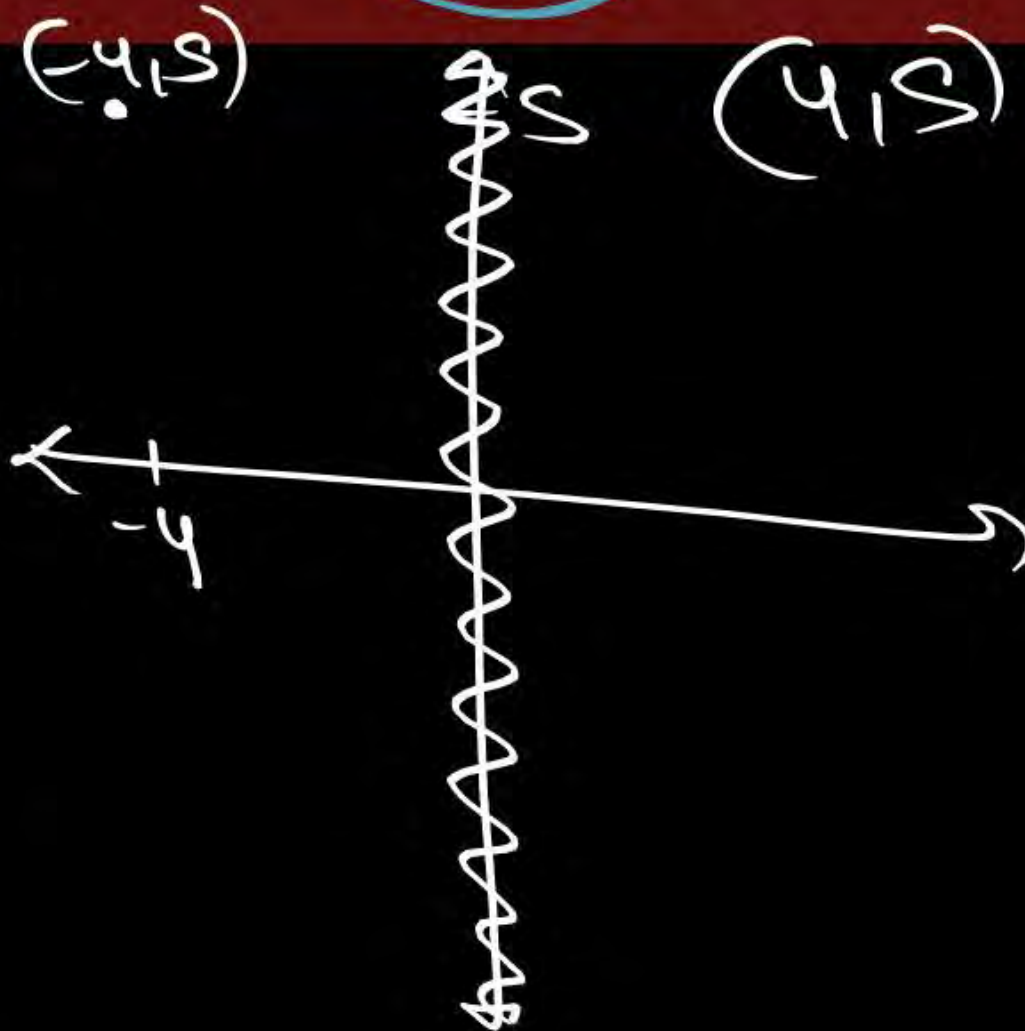
$(4, 5)$

C

$(4, -5)$

D

$(5, -4)$



? QUESTION

Plot the following points on the graph paper:

(i) $(2, 5)$

(iv) $(7, -4)$

(vii) $(-4, 0)$

(x) $(0, 0)$

(ii) $(4, -3)$

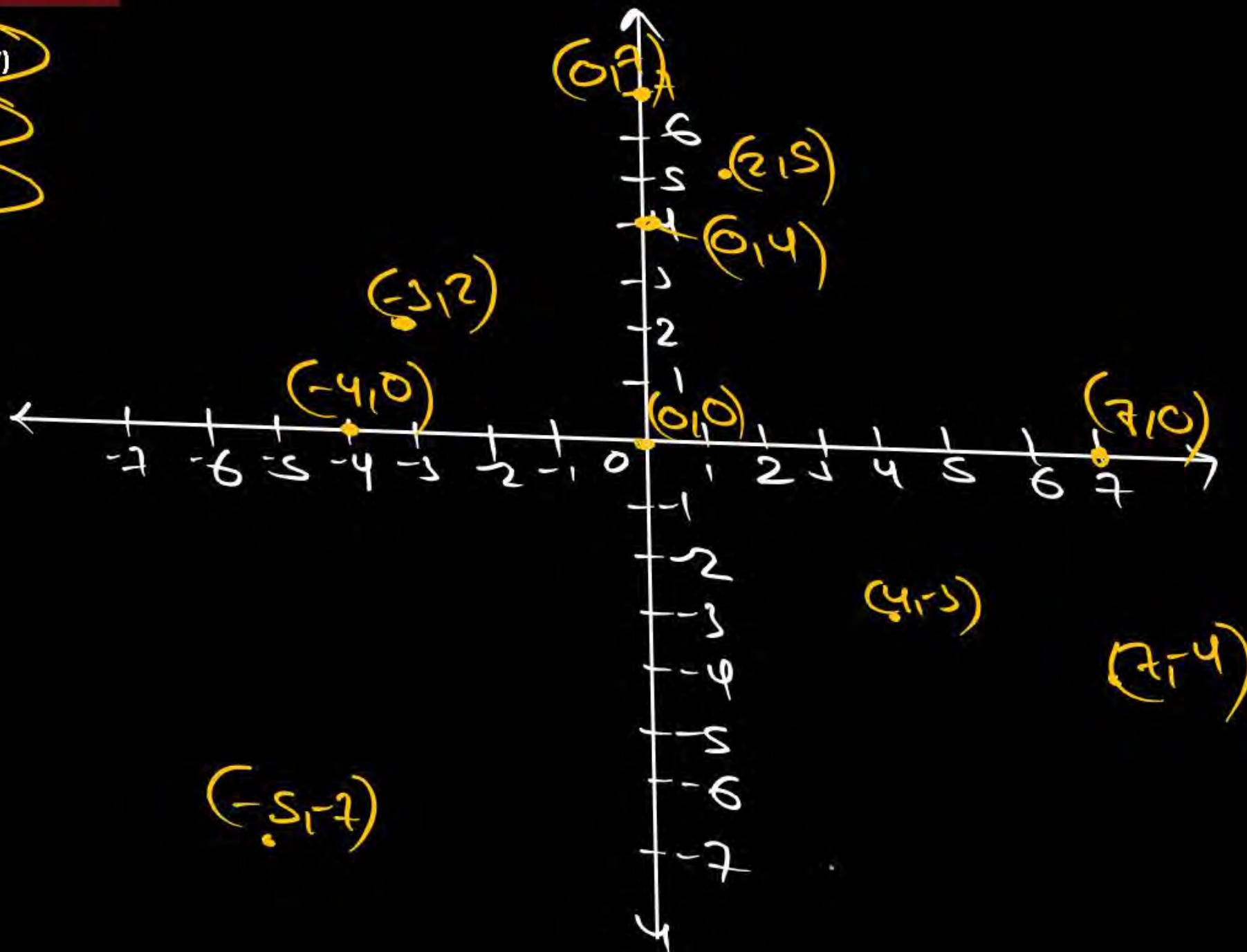
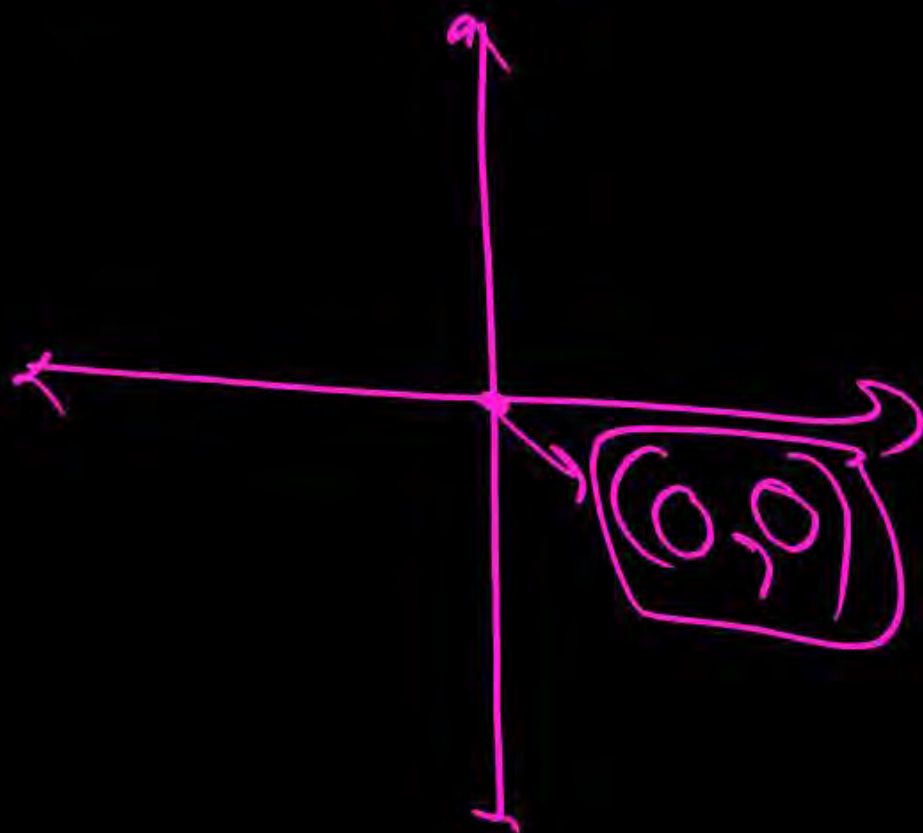
(v) $(-3, 2)$

(viii) $(0, 7)$

(iii) $(-5, -7)$

(vi) $(7, 0)$

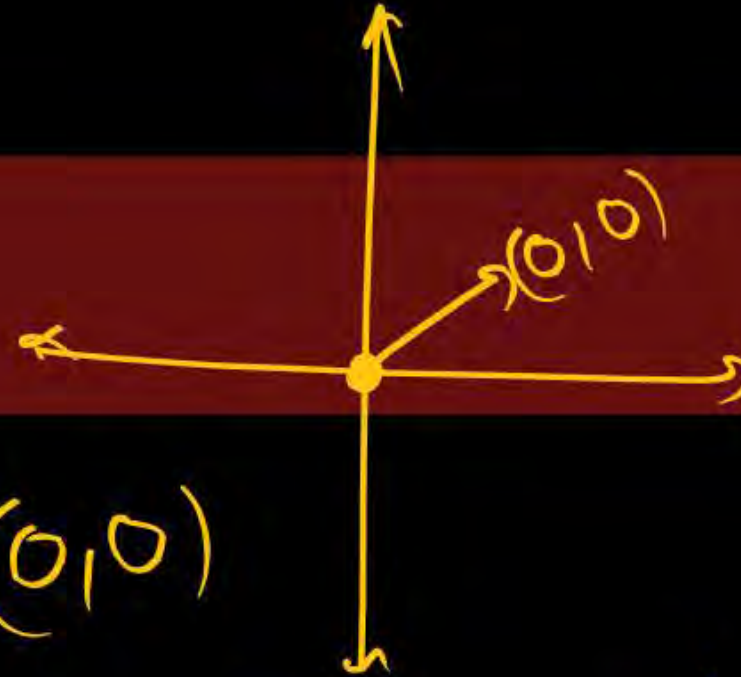
(ix) $(0, 4)$





QUESTION

Find the coordinates of the point:



- 1 which lies on x and y axes both $(0,0)$
- 2 whose ordinates is -4 and which lies on y-axis $(0, -4)$
- 3 whose abscissa is 5 and which lies on x-axis $(5, 0)$



Thank
You

