UDAAN

2026

Pair of Linear Equation in Two Variables

MATHS LECTURE-2

BY-RITIK SIR

Topics *to be covered*

A Graphical Representation of Solving

B Substitution Method

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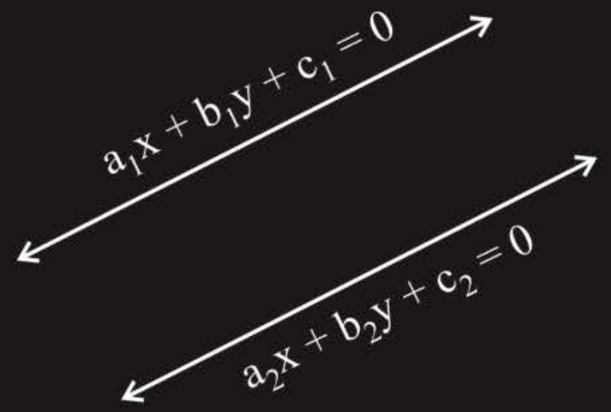
#Q. The following pair of lines are non-intersecting. Which of the following statements is true?

A $\frac{a_1}{a_2} = \frac{b_1}{b_2} = \frac{c_1}{c_2}$

B $\frac{a_1}{a_2} = \frac{b_1}{b_2} \neq \frac{c_1}{c_2}$

C $\frac{a_1}{a_2} \neq \frac{b_1}{b_2} = \frac{c_1}{c_2}$

D $\frac{a_1}{a_2} \neq \frac{b_1}{b_2} \neq \frac{c_1}{c_2}$



#Q. Two straight paths are represented byt eh equations $x - 3y = 2$ and $-2x + 6y = 5$.
Check whether the paths cross each other or not.

lines

$x - 3y - 2 = 0$

$-2x + 6y - 5 = 0$

$\frac{1}{-2} \quad \frac{-3}{6} \quad \frac{-2}{-5}$

$\frac{-1}{2} = \frac{-1}{2} \neq \frac{2}{5}$

$\frac{a_1}{a_2} = \frac{b_1}{b_2} \neq \frac{c_1}{c_2}$

N.S

Paths donot cross

#HOT

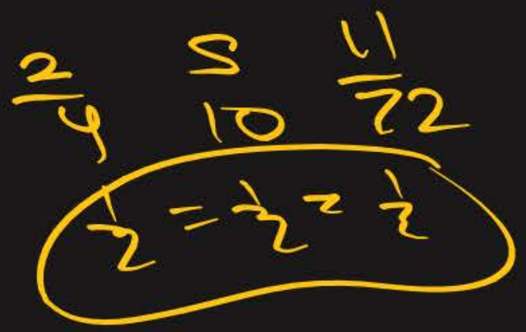
#Q. A pair of linear equations which has a unique solution $x = 2, y = -3$ is:

A $x + y = -1; 2x - 3y = -5$

B $2x + 5y = -11; 4x + 10y = -22$

C $2x - y = 1; 3x + 2y = 0$

D $x - 4y - 14 = 0; x - y - 13 = -8$



Solution nikalna

#Q. Solve the following system of linear equations $\begin{aligned} x - y &= 1 \\ 2x + y &= 8 \end{aligned}$ graphically.

Shade the area bounded by these two lines and y-axis. Also, determine this area.

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$x - y = 1$

x	0	1
y	-1	0

(0, -1)

(1, 0)

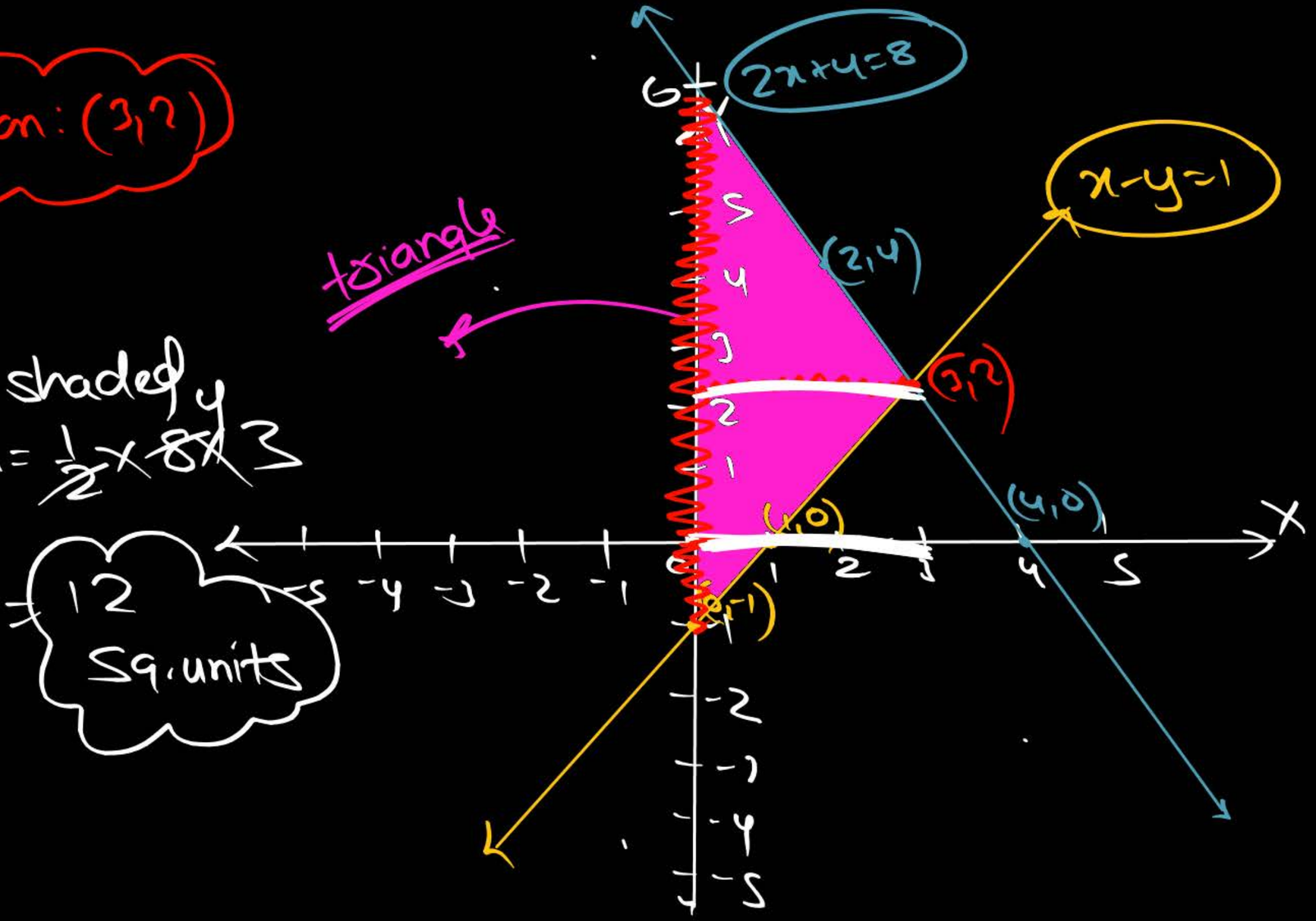
$2x + y = 8$

x	0	4	2
y	8	0	4

(4, 0)

(2, 4)

Solution: (3,2)

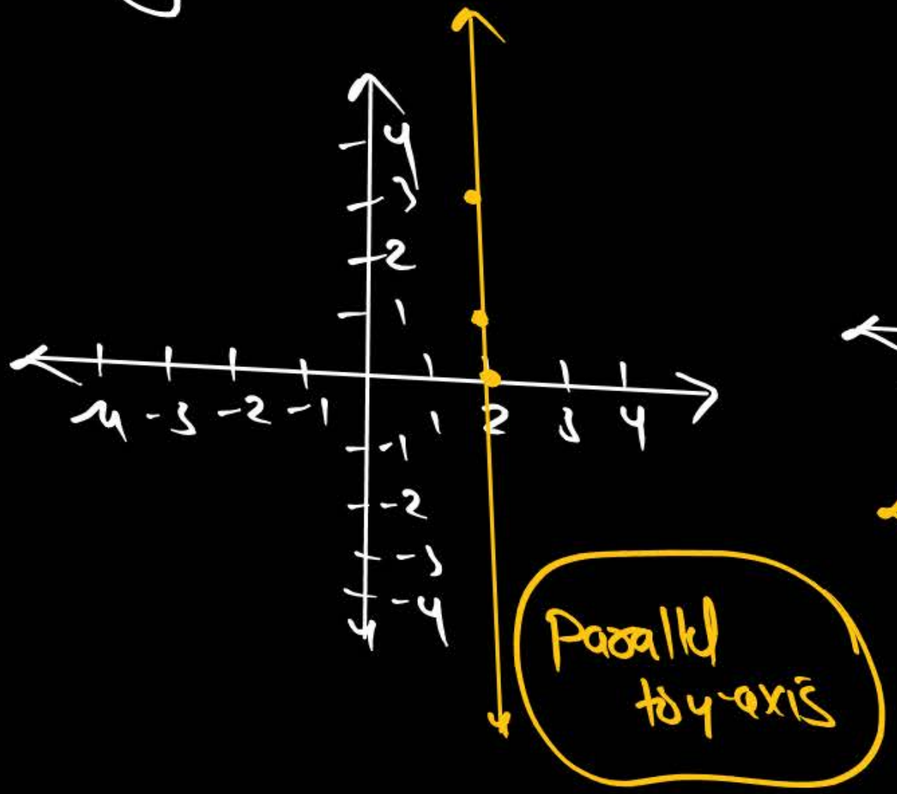


Area of shaded region = $\frac{1}{2} \times 8 \times 3$

12 sq. units

Q. $x + 0y = 2$ → $x = 2$

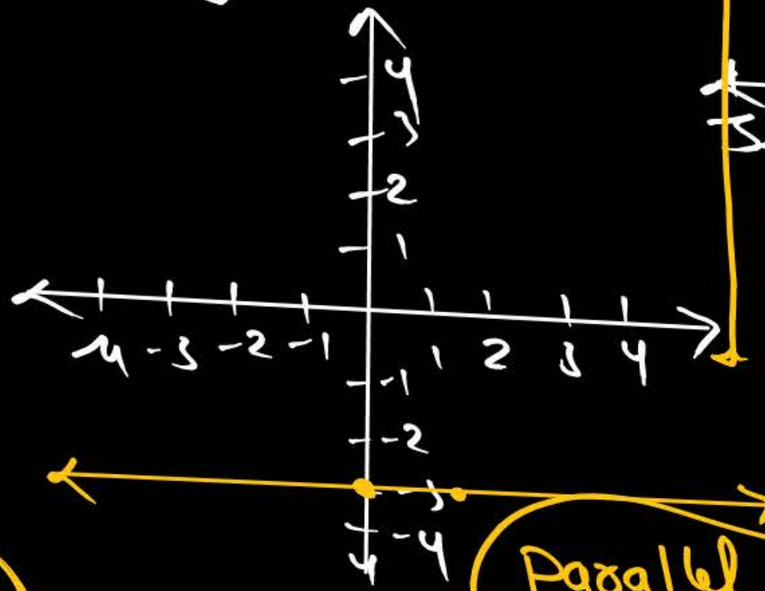
x	2	2	2	2	2	2
y	0	1	3	-	-	-



Parallel to y-axis

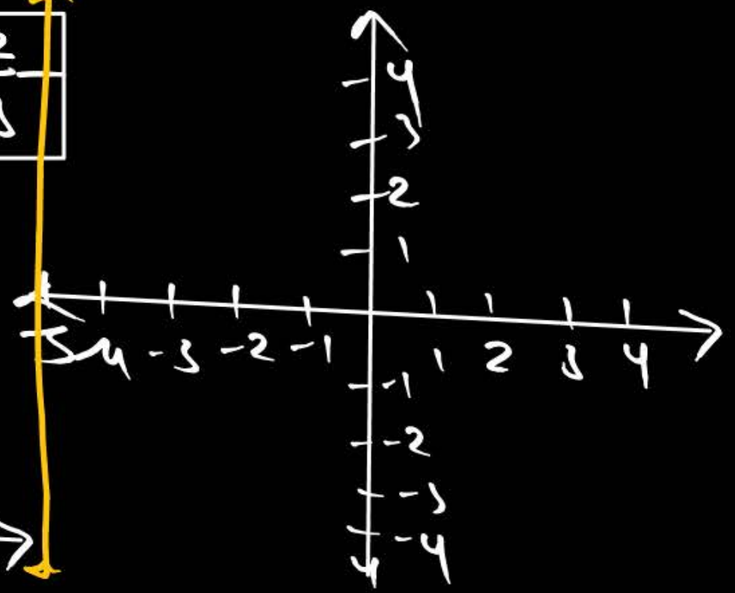
Q. $0x + y = -3$ → $y = -3$

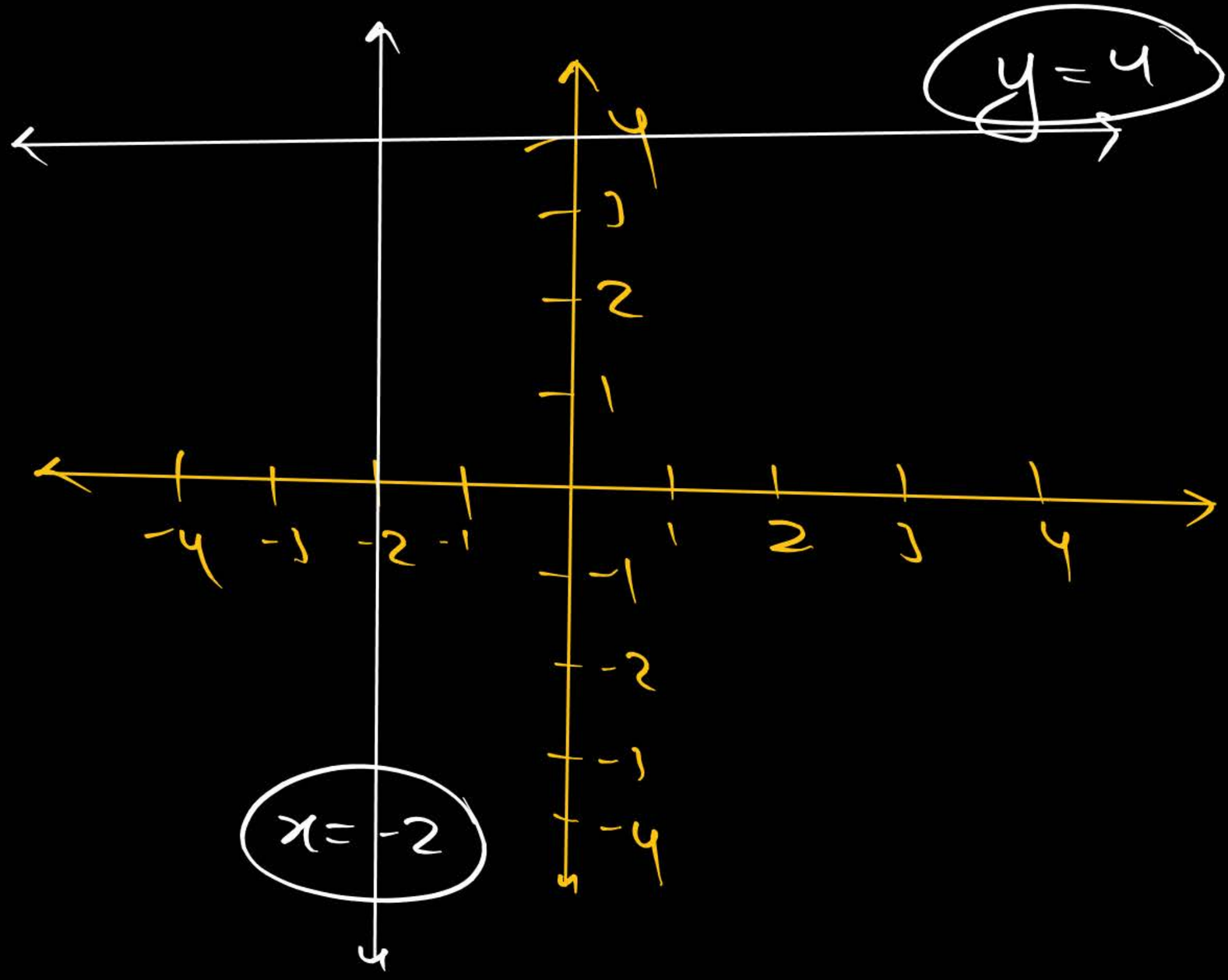
x	0	1	2	-2
y	-3	-3	-3	-3



Parallel to x-axis

Q. $x = -5$




y = 4
x = -2
4
3
2
1
-1
-2
-3
-4
-4
-3
-2
-1
1
2
3
4

#Q. (a) Solve the pair of equations $x = 3$ and $y = -4$ graphically.

OR

(b) Using graphical method, find whether the following system of linear equations is consistent or not: $x = 0$ and $y = -7$.

Solution

I C

$x=0 \rightarrow$ eqn of y-axis.

$y=0 \rightarrow$ eqn of x-axis.

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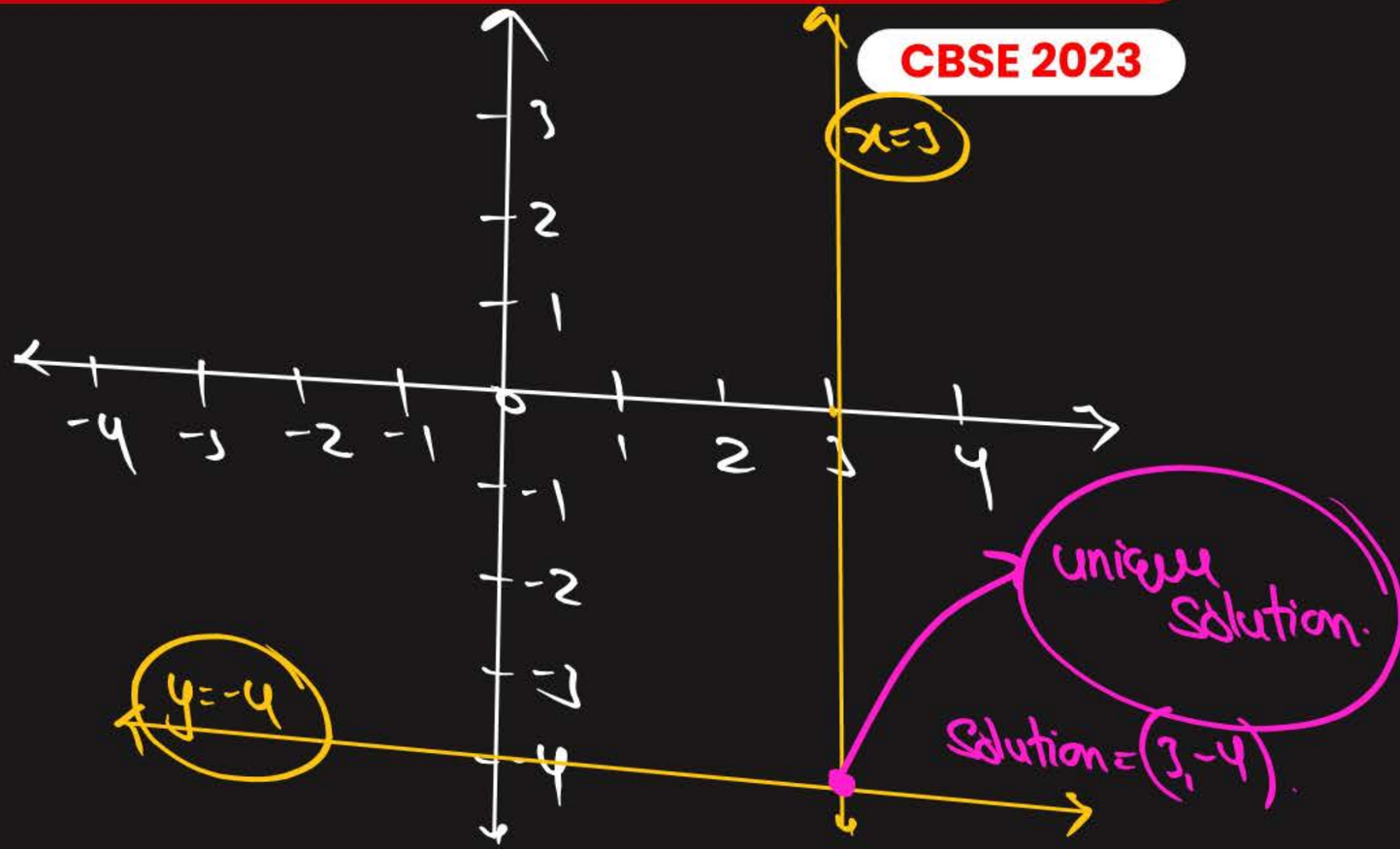


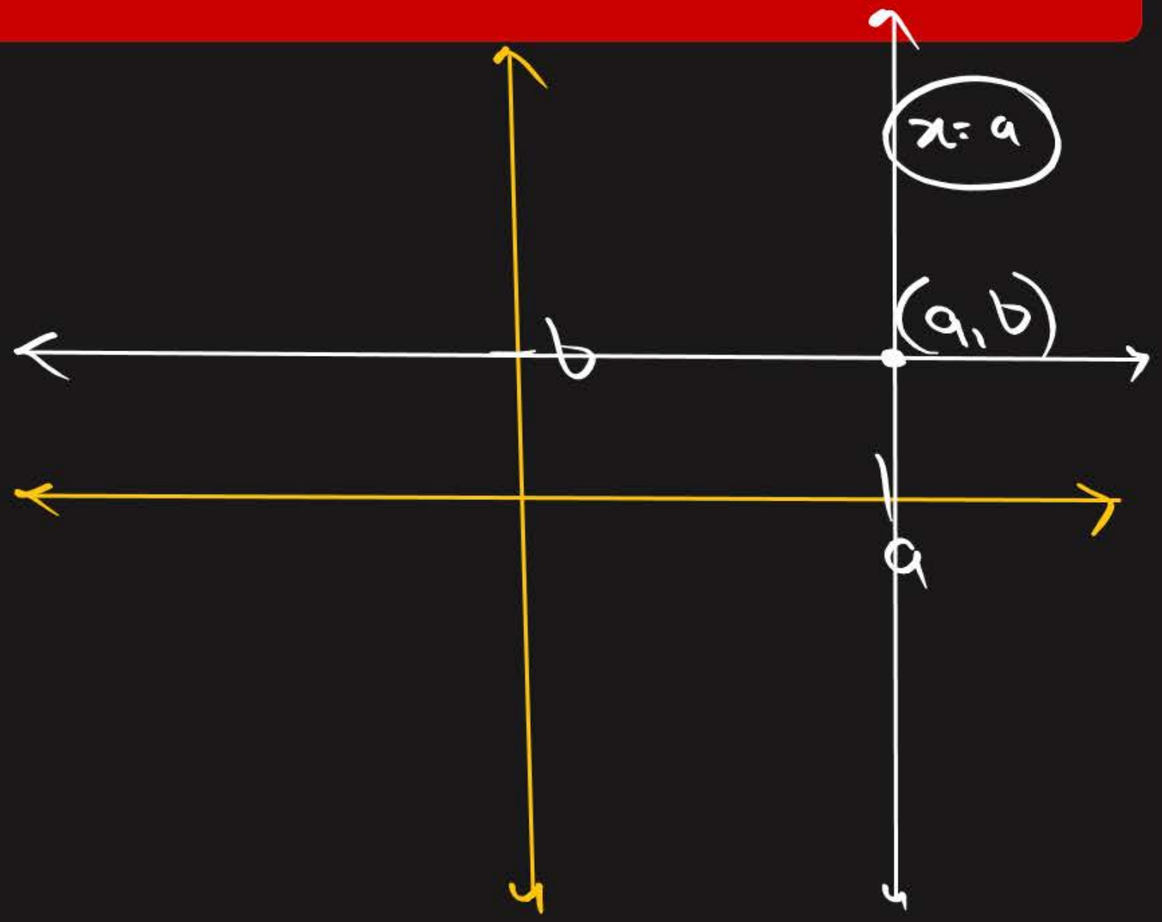
#Q. The pair of equations x = a and y = b graphically represents lines which are:

A parallel

B intersecting at (b, a)

C coincident

D intersecting at (a, b)



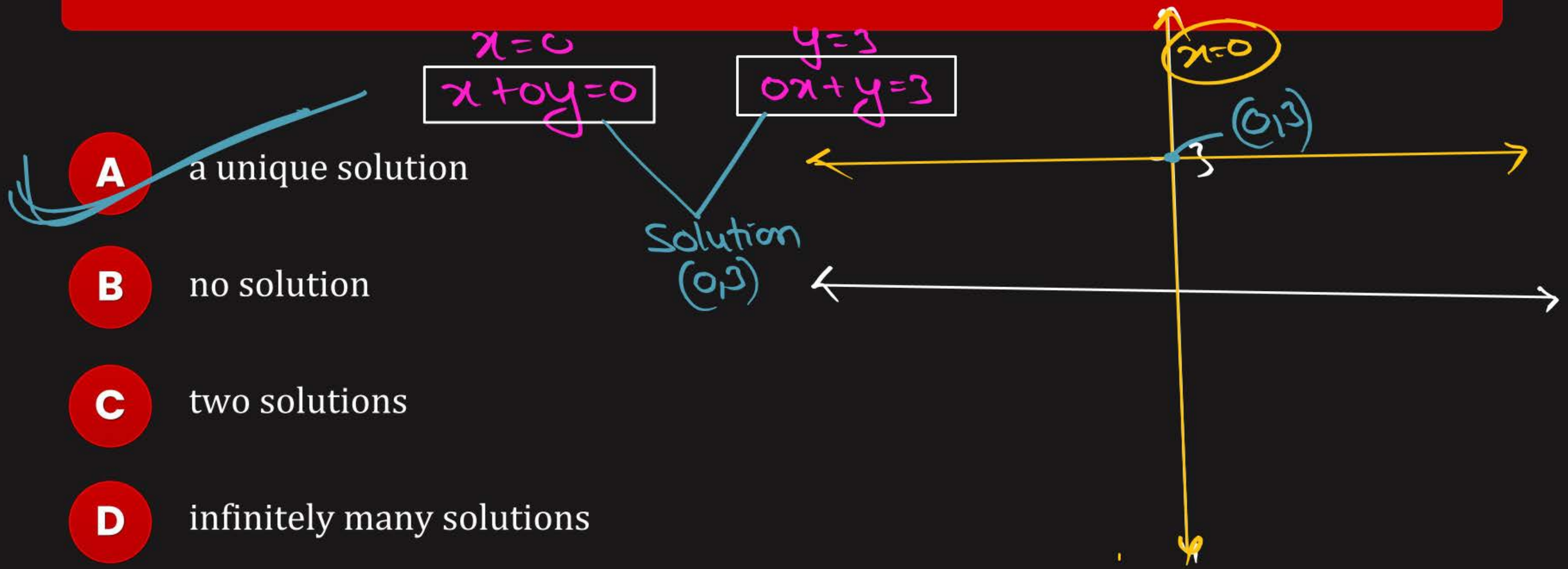
#Q. The system of equations x = 0, y = 3 has

A a unique solution

B no solution

C two solutions

D infinitely many solutions



#QT

#Q. The area of the triangle formed by the line $\frac{x}{a}+\frac{y}{b}=1$ with the coordinate axes is

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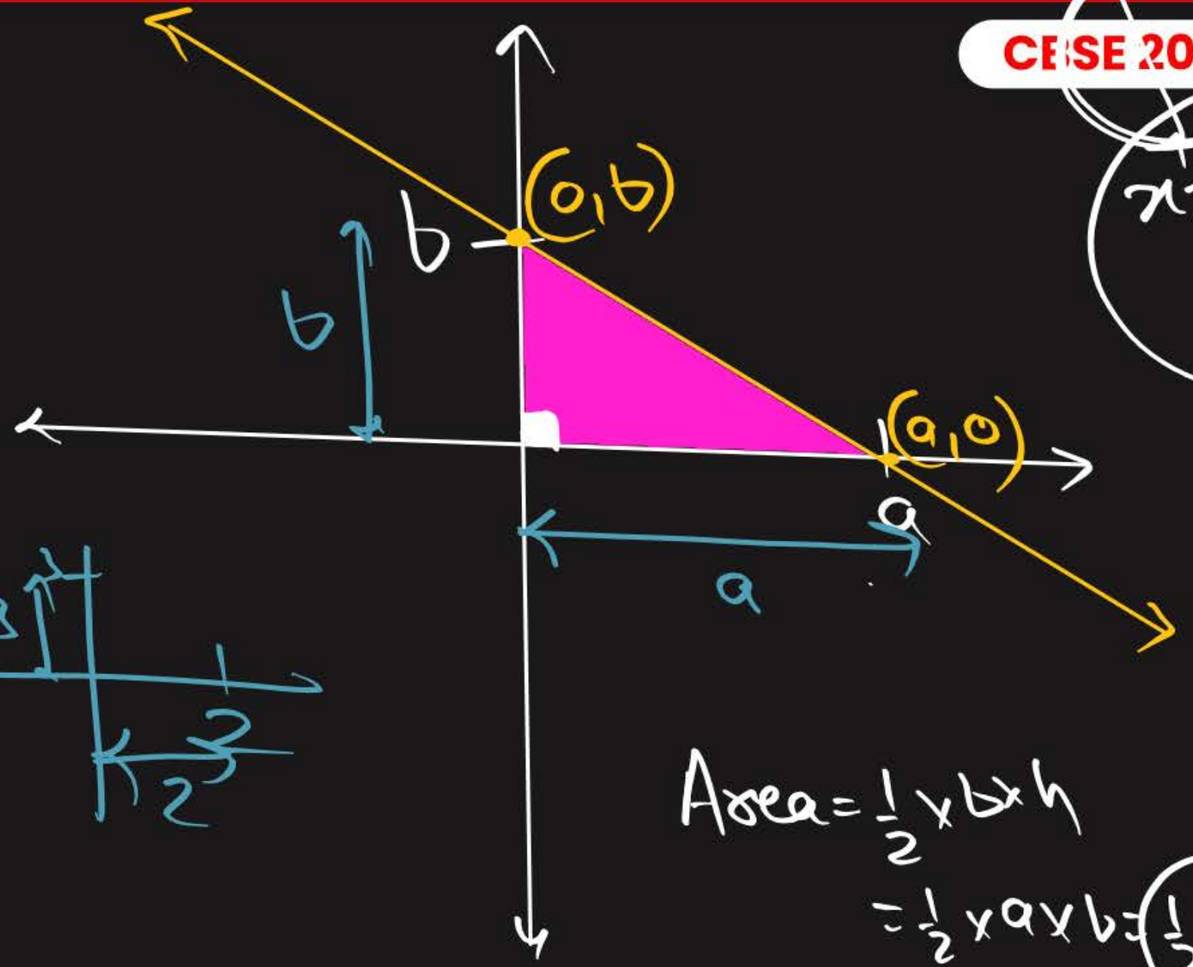
x-axis and y-axis

$\frac{x}{a}+\frac{y}{b}=1$

x	0	a
y	b	0

(0, b)

(a, 0)



Area $= \frac{1}{2} \times b \times h$

$= \frac{1}{2} \times a \times b = \frac{1}{2}ab$ Ans.

A. ab

B. 2 ab

C. $\frac{1}{2}$ ab

D. $\frac{1}{4}$ ab

#Q. The point of intersection of the line represented by $3x - y = 3$ and y-axis is given by:

A. $(0, -3)$

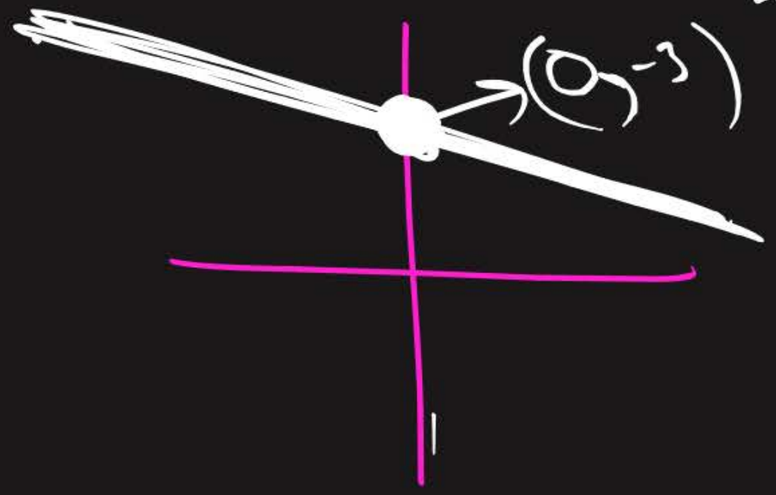
B. $(0, 3)$

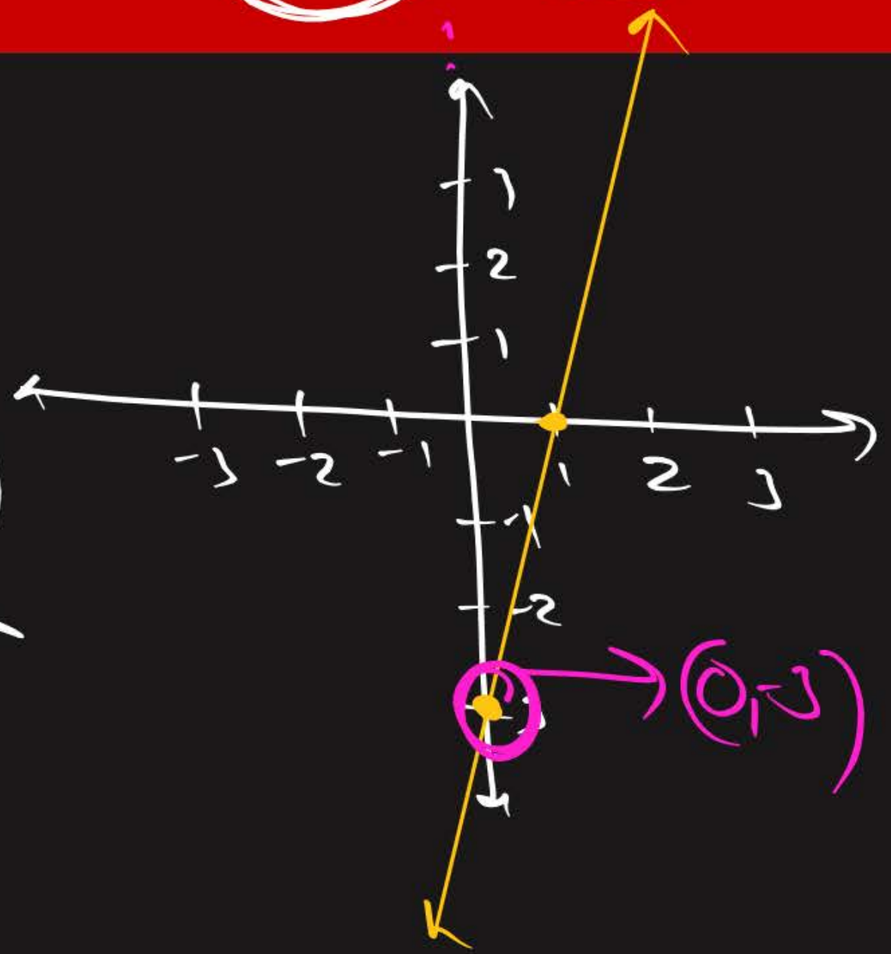
C. $(2, 0)$

D. $(-2, 0)$

$3x - y = 3$

x	0	1
y	-3	0





Q. $3x - y = 2$

point of intersection.

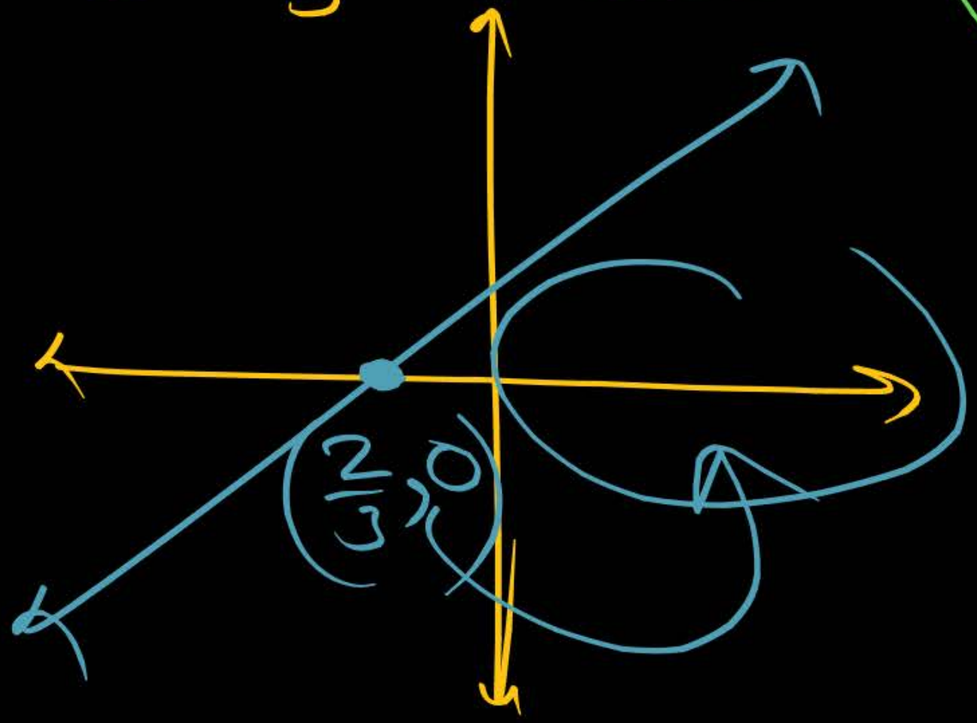
X-axis

$y = 0$

$3x - 0 = 2$

$3x = 2$

$x = 2/3$



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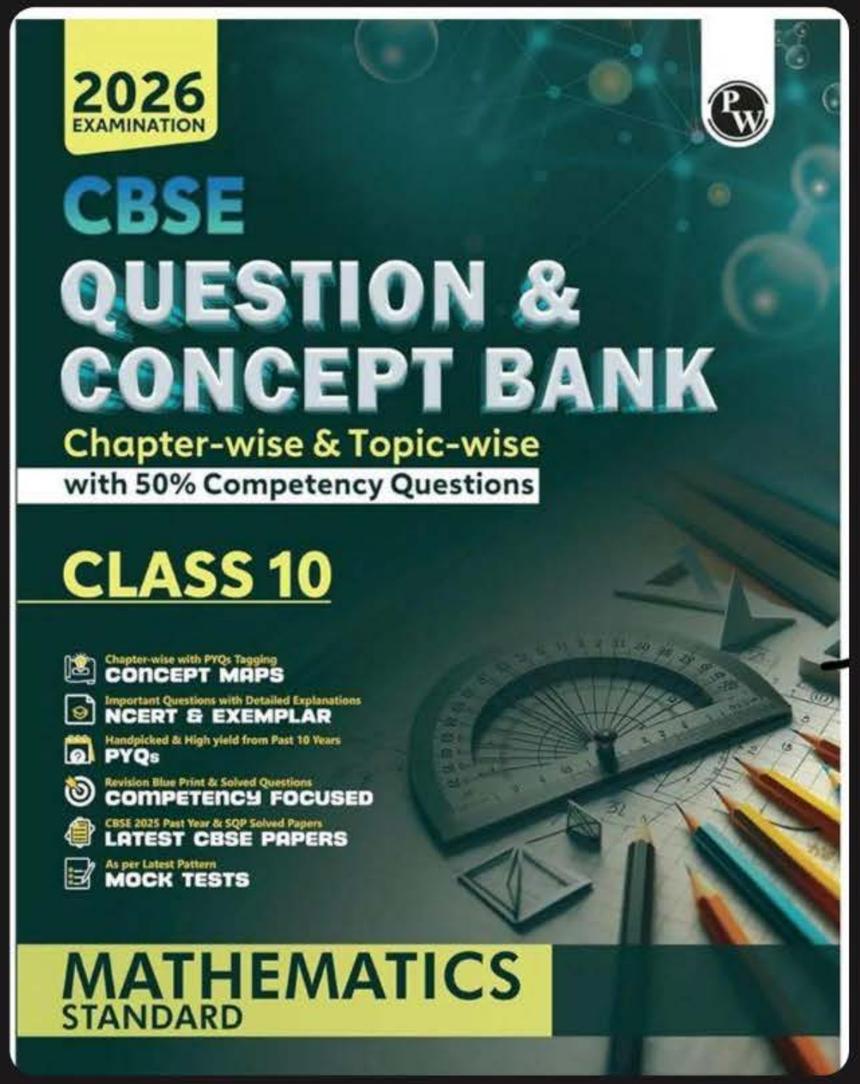

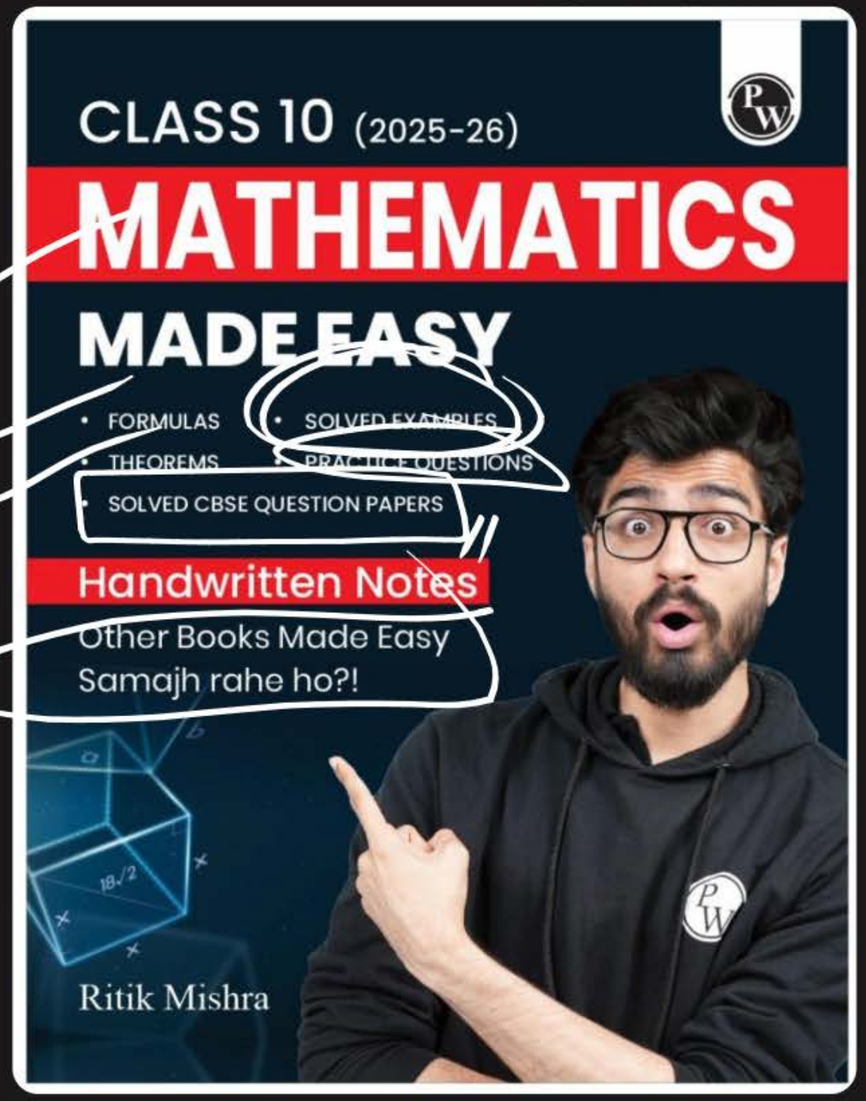

Hhh


WORK HARD
DREAM BIG
NEVER GIVE UP

Thank You