

6. CARTESIAN PLANE

Class: VII Mathematics (01)
IIT FOUNDATION.

TEACHING TASK

01. $(-1, -2) \in Q_3$ Since $-1 < 0, -2 < 0$

Ans: B

02. $(2, 0)$ lies on X-axis

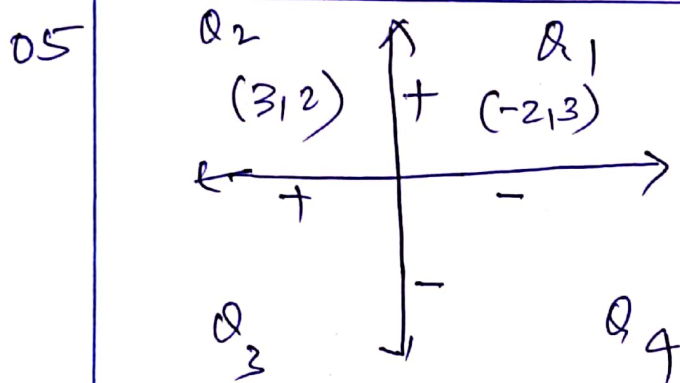
Ans: C

03. $(2, -4) \in Q_4$ Since $2 > 0, -4 < 0$

Ans: B

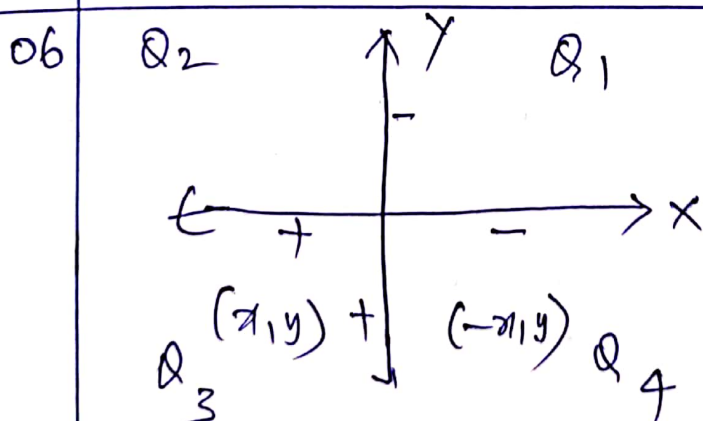
04. $(-2, 0) \in X\text{-axis}$ Since y-coordinate is zero

Ans: C



$\therefore (3, 2) \in Q_2$

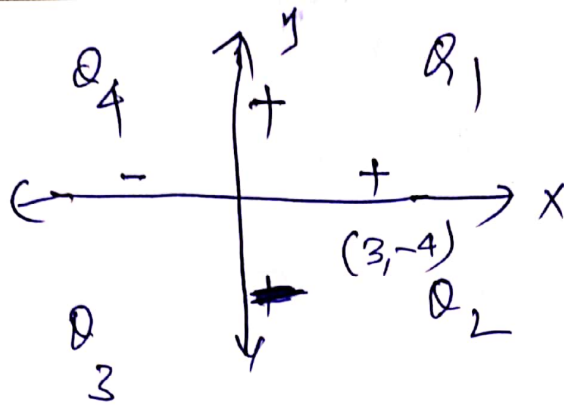
Ans: A



$(-x, y) \in Q_4$

Ans: C

07

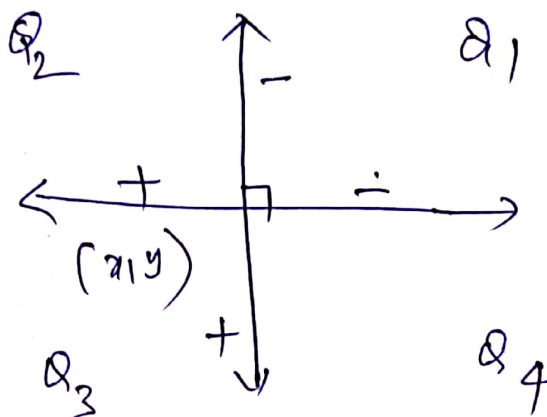


(02)

$$(3, -4) \in Q_2$$

Ans: B

08



$$(x, y) \in Q_3$$

Ans B

09 Quadrant

$$10 \quad (1, 2) \in Q_1, \quad (-2, -3) \in Q_3, \quad (2, -3) \in Q_4$$

Ans: D

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$$11. \quad (3, 0), (0, 0) \in X\text{-axis}$$

Ans: B.

Ans: A, C

$$12 \quad (0, 0), (0, 4), (0, 3) \in Y\text{-axis}$$

$$13. \quad (2, 3), (\sqrt{2}, \sqrt{3}), \left(\frac{1}{2}, \frac{2}{3}\right) \in Q_1$$

Ans: A, C, D

$$\text{Since } x > 0, y > 0$$

S.D.: Conceptual (True)

14 Statement I: Given points belongs to the x-axis
Since $y = 0$

Ans: A

Statement II: Conceptual (True)

Ans: C



17

$$x < 0 \Rightarrow -x > 0$$

$$: (-x, y) \in Q_1$$

Ans: A

18

$$x < 0 \Rightarrow -x > 0$$

$$y < 0 \Rightarrow -y > 0$$

$$(-x, -y) \in Q_1$$

Ans: Q_1

21

$$A(2, 0), B(4, 0)$$

$$AB = |2 - 4| = |-2| = 2$$

Ans: 2

22

$$A(0, -4), B(0, 4)$$

$$AB = |-4 - 4| = |-8| = 8$$

Ans: 8

23

$$a) x > 0, y > 0 \Rightarrow (x, y) \in Q_1$$

$$b) x < 0, y > 0 \Rightarrow (x, y) \in Q_2$$

$$c) x < 0, y < 0 \Rightarrow (x, y) \in Q_3$$

$$d) x > 0, y < 0 \Rightarrow (x, y) \in Q_4$$

Ans: t, s, r, q

24

$$a) (-3, 4) \in Q_2$$

$$b) (1, 3) \in Q_1$$

$$c) \left(-\frac{1}{2}, -\frac{1}{3}\right) \in Q_3$$

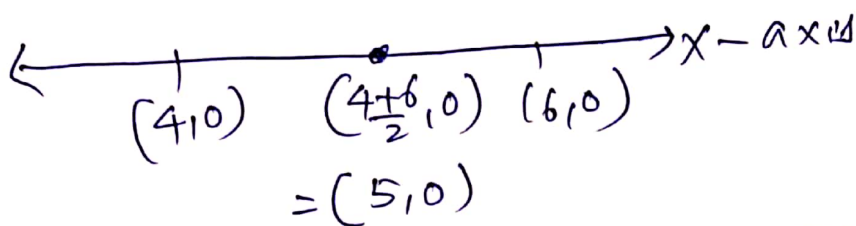
$$d) (3, -4) \in Q_4$$

Ans: q, p, r, s

01.	$(0, y) \in y\text{-axis}$	Ans: D
02	horizontal line $\rightarrow x\text{-axis}$	Ans: B
03	vertical line $\rightarrow y\text{-axis}$	Ans: C
04	$(-3, 4) \in Q_2$	Ans: B
05	$ y = -3 = 3$	Ans: C
06	$ x = -3 = 3$	Ans: B
07	Origin = $(0, 0)$	Ans: C
08	$(-x, 0) \in \text{Negative } x\text{-axis}$	Ans: B
09	$(0, 0) \in \text{Neither any quadrant}$	Ans: D
10	$\odot x \neq 0, y \neq 0, (x, y)$ belongs to any one of the quadrants depending upon the sign of x and y	
* JEE MAINS LEVEL *		
Q1	$2x+1=0 \Rightarrow x = -\frac{1}{2}$ $y-1=0 \Rightarrow y=1$ $\therefore (x, y) = (-\frac{1}{2}, 1)$	Ans: D
Q2	$A(-3, 2), B(2, 2)$ $AB = x_2 - x_1 = 2 - (-3) = 2+3 = 5$	Ans: C
Q3	$P(4, 2), Q(4, -5)$ $PQ = y_2 - y_1 = -5 - 2 = -7 = 7$	Ans: B

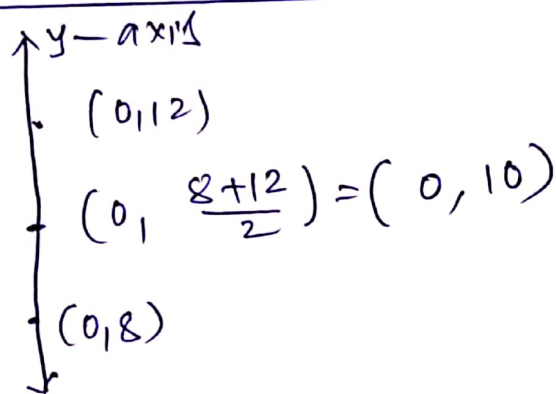
04 $A(4,0), B(6,0)$

05



Ans: D

05



Ans: B

06 $(x,y) \in Q_2 \quad (-, +)$
 $\Rightarrow x < 0, y > 0$

Ans: C

07 $(-10,0) \in \text{Negative } x\text{-axis}$

Ans: C

08 Any number

Ans: D

09 ordinates = 0

Ans: B

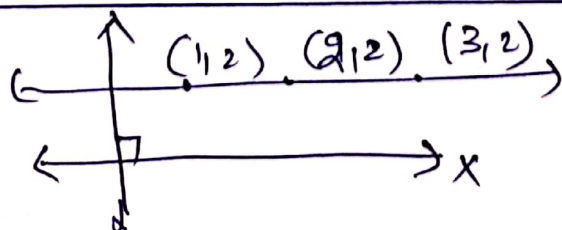
10 $(x,y) \in I \text{ \& \; } IV$
 when $x > 0$

Ans: D

11 $(x,y) \in Q_3$
 $\Rightarrow x < 0, y < 0$

Ans: A, C

12



Both statements are true

Ans: A

17

$$x > 0, y > 0, (-x, -y) \in Q_3$$

(6)

Ans: C

18

$$\begin{array}{l|l} x+1=0 & 2y+1=0 \\ x=-1 & \Rightarrow y=-\frac{1}{2} \end{array}$$

$$(-1, -\frac{1}{2}) \in Q_3$$

Ans: C

21

$$A(3, 0), B(7, 0)$$

$$\text{mid-point of } AB = P = \left(\frac{3+7}{2}, 0 \right) = (5, 0)$$

$$C(-2, 0), D(-6, 0)$$

$$\text{mid-point of } CD = Q = \left(\frac{-2-6}{2}, 0 \right) = (-4, 0)$$

$$\therefore PQ = \left| \frac{x_2 - x_1}{2} \right| = |-4 - 5| = 9$$

Ans: 9

23

$$a) (3, 0) \in \text{positive } x\text{-axis}$$

$$b) (-3, 0) \in \text{Negative } x\text{-axis}$$

$$c) (0, 3) \in \text{positive } y\text{-axis}$$

$$d) (0, -3) \in \text{Negative } y\text{-axis}$$

Ans: a, b, c, d

Teaching Task (Cartesian plane)

15 Assertion(A): $(0, -2) \in \text{Negative } y\text{-axis}$ (True)
Reason: Conceptual (True) Ans: A

16 Assertion(A): Conceptual (False)
Reason: Conceptual (True) Ans: D

19. $R(6, 0) \in x\text{-axis}$ Ans: C

20 $OR = \sqrt{6^2 + 0^2} = 6$ Ans: B

Learner's Task (Jee main)

12 $(-3, -4), (-7, -2) \in Q_3$ Ans: A, C

14. Statement I: Conceptual (True)
Statement II: Conceptual (False) Ans: C

15 Assertion: $(0, 5) \in y\text{-axis}$ (True)
Reason: Conceptual (True) Ans: A

16 Assertion: $(-4, -3) \in Q_3$ (False)
Reason: $(x, y) \in Q_4 \Rightarrow x > 0, y < 0$ (True)
Ans: D

19. $P(-3, 4) \in II$ (B)

20 the image of $(-3, 4)$ w.r.t $x\text{-axis}$ $(-3, -4)$ A: B

22 $AB = \sqrt{3^2 + 4^2} = 5$ Ans: 5

24 A) $(2, 5)$ (P)
 B) $(-6, 7)$ (Q)
 C) $(-3, -4)$ (R)
 D) $(5, -6)$ (S)

Ans: P, Q, R, S
 → TIME ENO ←