

### 1. OBJECTIVE QUESTIONS

1. Point  $(-2, 3)$  lies in the  
 (a) first quadrant (b) second quadrant  
 (c) third quadrant (d) fourth quadrant

Ans : (b) second quadrant

Since  $x$ -coordinate of  $(-2, 3)$  is negative and  $y$ -coordinate is positive. Point  $(-2, 3)$  lies in the II quadrant.

2. Point  $(0, -2)$  lies  
 (a) on the  $x$ -axis  
 (b) in the second quadrant  
 (c) on the  $y$ -axis  
 (d) none of these

Ans : (c) on the  $y$ -axis

Since  $x$ -coordinate of  $(0, -2)$  is zero.  $(0, -2)$  lies on the  $y$ -axis.

3. Point  $(-2, 0)$  lies  
 (a) on the negative part of the  $x$ -axis  
 (b) on the negative part of the  $y$ -axis  
 (c) in the third quadrant  
 (d) in the fourth quadrant

Ans : (a) on the negative part of the  $x$ -axis

Since  $x$ -coordinate of  $(-2, 0)$  is negative and  $y$ -coordinate is zero point  $(-2, 0)$  lies on negative part of the  $x$ -axis.

4. Abscissa of  $(2, 3)$  is  
 (a)  $-2$  (b)  $3$   
 (c)  $2$  (d) none of these

Ans : (c)  $2$

In the ordered pair  $(x, y)$ ,  $x$  is the abscissa and  $y$  is the ordinate.

In  $(2, 3)$ , abscissa is  $2$ .

5. If  $p(a, b)$  lies in II quadrant then which of the following is true about  $a$  and  $b$ ?  
 (a)  $a > 0, b > 0$  (b)  $a > 0, b < 0$   
 (c)  $a < 0, b > 0$  (d)  $a < 0, b < 0$

Ans : (c)  $a < 0, b > 0$

In second quadrant, abscissa is negative and ordinate is a positive number.

$\Rightarrow a < 0, b > 0$

6. A point lies on negative side of  $x$ -axis. Its distance from origin is 10 units. The coordinates of the point are  
 (a)  $(10, 0)$  (b)  $(-10, 0)$   
 (c)  $(0, 10)$  (d)  $(0, -10)$

Ans : (b)  $(-10, 0)$

The required points is  $(-10, 0)$ .

7. A point whose abscissa is  $-3$  and ordinate is  $2$  lies in  
 (a) first quadrant (b) second quadrant  
 (c) third quadrant (d) fourth quadrant

Ans : (b) second quadrant

Since the abscissa is negative and the ordinate is positive. So, the point lies in second quadrant.

8. In which quadrant will  $(-3, 4)$  lie?  
 (a) I quadrant (b) II quadrant  
 (c) III quadrant (d) IV quadrant

Ans : (b) II quadrant

Since,  $x$ -coordinate of  $(-3, 4)$  is negative and  $y$ -coordinate is positive.

Point  $(-3, 4)$  lies in II quadrant.

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9. a point whose abscissa and ordinate are  $2$  and  $-5$  respectively, lies in  
 (a) first quadrant (b) second quadrant  
 (c) third quadrant (d) fourth quadrant

Ans : (d) fourth quadrant

Since the abscissa is positive and the ordinate is negative. So, the point lies in fourth quadrant.

10. The abscissa of a point is  $-7$  and the ordinate is  $2$ , then the point is  
 (a)  $(2, -7)$  (b)  $(-7, 2)$   
 (c)  $(-2, 7)$  (d)  $(7, -2)$

Ans : (b)  $(-7, 2)$

As for point  $(x, y)$ ,  $x$  represents abscissa and  $y$  represents ordinate

11. The point  $(0, 5)$  lies  
 (a) on the  $x$ -axis (b) on the  $y$ -axis  
 (c) in the IInd quadrant (d) in the Ist quadrant

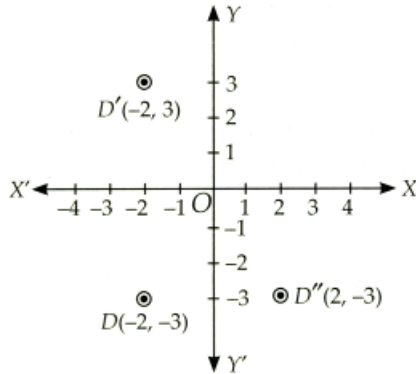
Ans : (b) on the  $y$ -axis

12. Plot  $D(-2, -3)$  on the graph paper. Reflections of

- $D(-2, -3)$  in  $x$ -axis and  $y$ -axis respectively are  
 (a)  $(-2, 3)$  and  $(-2, -3)$     (b)  $(-2, -3)$  and  $(-2, 3)$   
 (c)  $(2, 3)$  and  $(-2, 3)$     (d) None of these

Ans : (d) None of these

Reflection of  $D(-2, -3)$  in  $x$ -axis is  $D'(-2, 3)$  and reflection of  $D(-2, -3)$  in  $y$ -axis is  $D''(2, -3)$ .



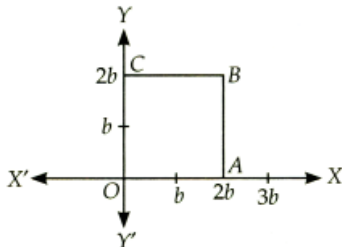
13. Abscissa of a point is positive in  
 (a) I quadrant only    (b) II quadrant only  
 (c) I and II quadrants    (d) I and IV quadrants

Ans : (d) I and IV quadrants

Points with abscissa positive are of the form  $(+, +)$  and  $(+, -)$ . They lie in I and IV quadrants respectively.

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14. If side of the square  $OABC$  is  $2b$  units, then coordinates of  $B$  are

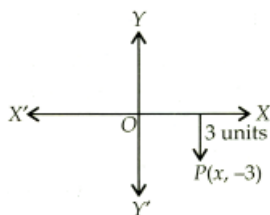


- (a)  $(2b, 0)$     (b)  $(0, 2b)$   
 (c)  $(2b, 2b)$     (d)  $(0, 0)$

Ans : (c)  $(2b, 2b)$

15. If perpendicular distance of a point  $P$  from the  $x$ -axis be 3 units along the negative direction of the  $y$ -axis, then the point  $P$  has  
 (a)  $x$  coordinate  $= -3$     (b)  $y$ -coordinate  $= -3$   
 (c)  $y$ -coordinate  $= 3$     (d) none of these

Ans : (b)  $y$ -coordinate  $= -3$

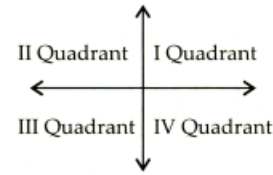


Point  $P$  has  $y$ -coordinate  $= -3$ .

16. In how many parts does the axes divide the plane?  
 (a) 1 part    (b) 2 parts  
 (c) 3 parts    (d) 4 parts

Ans : (d) 4 parts

Axes divide the plane in 4 parts. Each part is called quadrant.



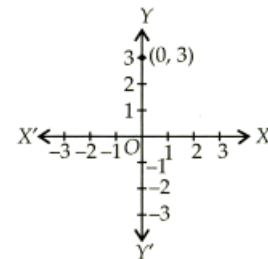
17. If  $a > 0$  and  $b < 0$ , then the point  $P(a, b)$  lies in  
 (a) IV quadrant    (b) II quadrant  
 (c) III quadrant    (d) I quadrant

Ans : (a) IV quadrant

Since the  $x$ -coordinate of point  $P(a, b)$  is positive and  $y$ -coordinate is negative. So, the point  $P$  lies in IV quadrant.

18. Point  $(0, 3)$  lies  
 (a) on  $x$ -axis    (b) on  $y$ -axis  
 (c) in I quadrant    (d) at origin

Ans : (b) on  $y$ -axis



$(0, 3)$  lies on  $y$ -axis.

19. Image of point  $(0, 3)$  about  $x$ -axis is  
 (a)  $(-3, 0)$     (b)  $(0, 3)$   
 (c)  $(0, -3)$     (d)  $(0, 0)$

Ans : (c)  $(0, -3)$

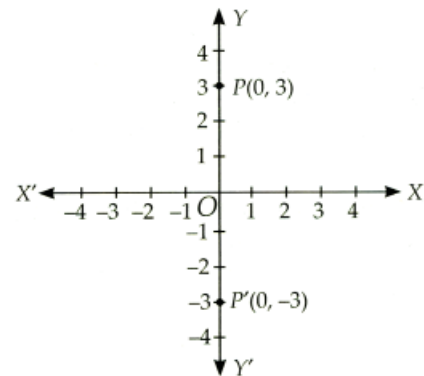
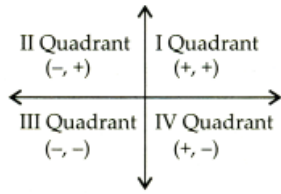


Image of point  $P(0, 3)$  about  $x$ -axis is  $P'(0, -3)$ .

20. The point for which the abscissa and ordinate have same signs will lie in  
 (a) I and II quadrants    (b) I and III quadrants  
 (c) I and IV quadrants    (d) III and IV quadrants

Ans : (b) I and III quadrants

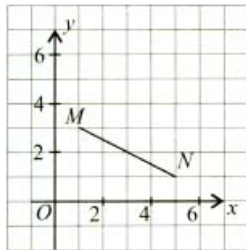


Abscissa and ordinate have same sign in I and III quadrants.

21. The distance of the point  $(5, -2)$  from  $x$ -axis is  
 (a) 5 (b)  $-2$   
 (c) 3 (d) 4

Ans : (b)  $-2$

22. The diagram shows two points,  $M$  and  $N$  on a Cartesian plane.



The abscissa of  $M$  and ordinate of  $N$  are

- (a) 3, 2 (b) 5, 1  
 (c) 1, 1 (d) 3, 5

Ans : (c) 1, 1

Coordinates of  $M = (1, 3)$

Coordinates of  $N = (5, 1)$

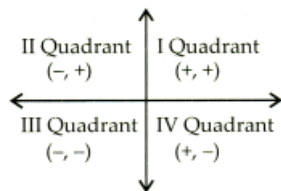
So, abscissa of  $M$  and ordinate of  $N$  are 1 and 1 respectively.

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23. Signs of the coordinates of a point in the III quadrant are

- (a)  $(+, +)$  (b)  $(-, +)$   
 (c)  $(+, -)$  (d)  $(-, -)$

Ans : (d)  $(-, -)$



In third quadrant, the sign of the coordinates are  $(-, -)$ .

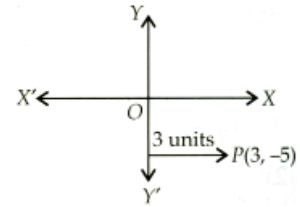
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24. If the coordinates of the point  $P$  are  $(3, -5)$  then the perpendicular distance of  $P$  from the  $y$ -axis.

- (a) 4 (b) 5  
 (c) 3 (d) 2

Ans : (c) 3

Since, the abscissa is 3.



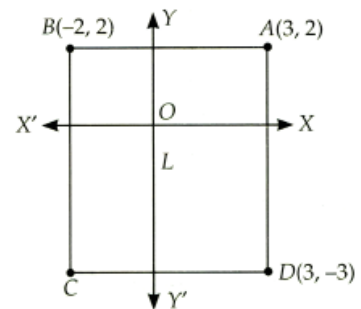
Perpendicular distance from the  $y$ -axis is 3 units.

25. The three vertices of a square  $ABCD$  are  $A(3, 2)$ ,  $B(-2, 2)$  and  $D(3, -3)$ . Find the coordinates of  $C$  and the area of square  $ABCD$ .

- (a)  $C(-2, -3)$ , 5 sq. units  
 (b)  $C(3, -3)$ , 5 sq. units  
 (c)  $C(3, 2)$ , 25 sq. units  
 (d)  $C(-2, -3)$ , 25 sq. units

Ans : (d)  $C(-2, -3)$ , 25 sq. units

Here,  $A(3, 2)$ ,  $B(-2, 2)$  and  $D(3, -3)$  are the three vertices of square  $ABCD$ .



Clearly, abscissa of  $C =$  abscissa of  $B = -2$ ,

Ordinate of  $C =$  ordinate of  $D = -3$ .

Coordinates of  $C$  are  $(-2, -3)$ .

$$CD = (2 + 3) = 5 \text{ units.}$$

$$\text{Area of square } ABCD = 5 \times 5 = 25 \text{ sq. units.}$$

26. In the ordered pair  $(a, -12)$ , if the second member of the pair is 4 times more than the first member, then the missing member ' $a$ ' is

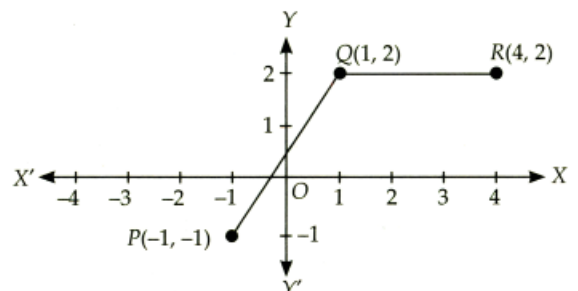
- (a)  $-3$  (b)  $-12$   
 (c)  $-24$  (d) 3

Ans : (a)  $-3$

We have,  $-12 = 4 \times a$

$$a = -3$$

27. What would be the coordinates of point  $S$  for points  $P, Q, R$  and  $S$  to form a parallelogram?



- (a)  $(4, 2)$  (b)  $(2, -1)$   
 (c)  $(4, -2)$  (d)  $(3, -1)$

Ans : (b)  $(2, -1)$

Let the coordinates of point  $S$  are  $(x, y)$ . Since,  $PQRS$  is a parallelogram. So, ordinate of  $S$  must be equal to ordinate of  $P$ .

$$y = -1$$

Again, since  $PQRS$  is a parallelogram.

$$PS = QR$$

$$x - (-1) = (4 - 1) = 3 \text{ units}$$

$$x + 1 = 3$$

$$x = 2$$

Hence, coordinates of  $S$  are  $(2, -1)$ .

28. In which quadrant abscissa is negative and ordinate is positive?

- (a) II (b) III  
(c) I (d) IV

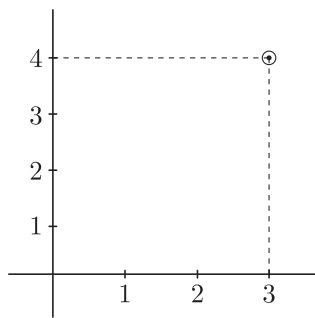
Ans : (a) II

Coordinates in the II quadrant are of the form  $(-, +)$

29. The distance of the point  $(3, 4)$  from  $y$ -axis is

- (a) 1 (b) 4  
(c) 2 (d) 3

Ans : (d) 3



Hence, distance from  $y$  - axis  
= Coordinate of  $x$  - axis of point = 3

## 2. FILL IN THE BLANK

**DIRECTION :** Complete the following statements with an appropriate word/term to be filled in the blank space(s).

1. Abscissa of a point is positive in ..... and ..... quadrants.  
Ans : first and fourth
2. A point both of whose coordinates are negative will lie in ..... quadrants.  
Ans : third
3. The  $y$ -coordinate of every point on the  $x$ -axis is .....  
Ans : 0
4. If  $x > 0$  and  $y < 0$ , then the point  $(x, -y)$  lies in ..... quadrant.  
Ans : First

5. If the point  $(x, y)$  lies in the second quadrant, then  $x$  is ..... and  $y$  is .....

Ans : Negative, Positive

6. If  $(x, y)$  represents a point and  $xy > 0$ , then the point may lie in ..... or ..... quadrant.

Ans : the first or third quadrant

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## 3. TRUE/FALSE

**DIRECTION :** Read the following statements and write your answer as true or false.

1. The ordinate of a point is its  $x$ -co-ordinate.  
Ans : False
2. The point  $(4, -5)$  lies in the third quadrant.  
Ans : False
3. The point  $(a, b)$  lies on  $y$ -axis if  $b = 0$ .  
Ans : False
4. The origin lies in the first quadrant.  
Ans : False
5. The point  $(-1, -1)$  lies on the  $x$ -axis.  
Ans : False
6. If the ordinate of a point is equal to its abscissa, then the point lies either in the first quadrant or in the second quadrant.  
Ans : False
7. The point  $(3, -2)$  lies below the  $x$ -axis.  
Ans : True
8. The  $y$ -axis is the vertical number line.  
Ans : True
9. The point  $(-1, 2)$  lies below the  $x$ -axis.  
Ans : False
10. Every point is located in one of the four quadrant.  
Ans : False
11. The point  $(-2, 0)$  lies on the  $y$ -axis.  
Ans : False
12. The point  $(0, -4)$  lies on the  $y$ -axis.  
Ans : True

### 4. MATCHING QUESTIONS

**DIRECTION :** In the section, each question has two matching lists. Choices for the correct combination of elements from Column-I and Column-II are given as options (a), (b), (c) and (d) out of which one is correct.

1. Match the following :

Column-I		Column-II	
(P)	coordinates of any point on $x$ -axis	(1)	$(0, 0)$
(Q)	coordinates of any point on $y$ -axis	(2)	$(x, y)$
(R)	ordered pair of $x$ and $y$	(3)	$(x, 0)$
(S)	coordinates of origin	(4)	$(0, y)$

	P	Q	R	S
(a)	3	4	2	1
(b)	4	3	1	2
(c)	4	3	2	1
(d)	3	4	1	2

Ans : P – 3, Q – 4, R – 2, S – 1

- (P) coordinates of any point on  $x$ -axis are  $(x, 0)$
- (Q) coordinates of any point on  $y$ -axis are  $(0, y)$
- (R)  $(x, y)$  is the ordered pair of  $x$  and  $y$ .
- (S)  $(0, 0)$  are coordinates of origin.

2. Match the following

Column-I		Column-II	
(P)	Ist quadrant	(1)	$(-1, -4)$
(Q)	IVth quadrant	(2)	$(5, -1)$
(R)	IInd quadrant	(3)	$(0, 6)$
(S)	IIIrd quadrant	(4)	$(-3, 2)$
		(5)	$(-3, -2)$
		(6)	$(4, 1)$

Ans : P – (3, 6), Q – 1, 5, R – 4, S – 2

3. Column-II give quadrant for points given in Column-I.

Column-I		Column-II	
(P)	$(4, 4)$	(1)	I quadrant
(Q)	$(-3, 7)$	(2)	II quadrant
(R)	$(2, -3)$	(3)	III quadrant
(S)	$(-1, -3)$	(4)	IV quadrant

Ans : P – 1, Q – 2, R – 4, S – 3

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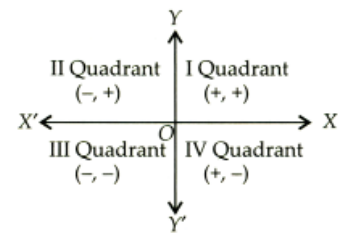
4. Match the ordered pairs given in Column-I with their

quadrants given in Column-II.

Column-I		Column-II	
(P)	$(4, -4)$	(1)	I quadrant
(Q)	$(3, 7)$	(2)	II quadrant
(R)	$(-2, -3)$	(3)	III quadrant
(S)	$(-1, 3)$	(4)	IV quadrant

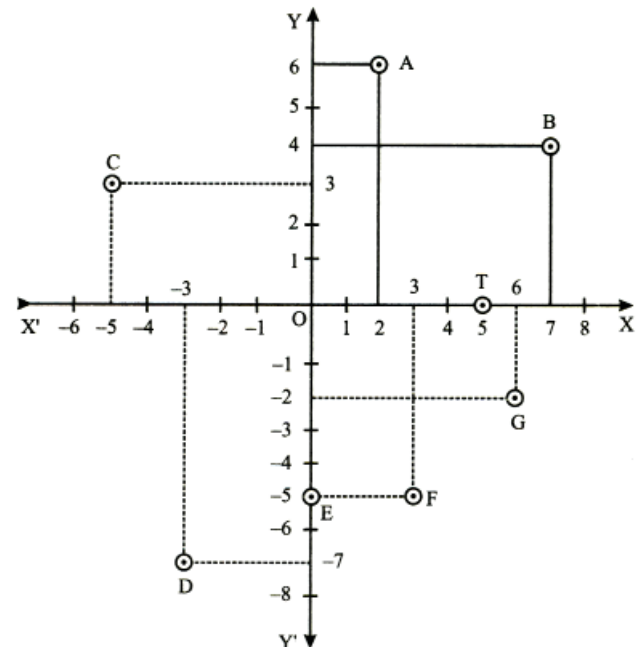
	P	Q	R	S
(a)	3	4	2	1
(b)	4	3	1	2
(c)	4	1	3	2
(d)	3	4	1	2

Ans : P – 4, Q – 1, R – 3, S – 2



- (P)  $(4, -4)$  lies in IV quadrant.
- (Q)  $(3, 7)$  lies in I quadrant.
- (R)  $(-2, -3)$  lies in III quadrant.
- (S)  $(-1, 3)$  lies in II quadrant.

5. Read the figure. On the basis of this figure match the Column-I with Column-II.



Column-I		Column-II	
(P)	Co-ordinates of point C is	(1)	$-5$
(Q)	The abscissa of point E is	(2)	$(0, 0)$

(R)	The ordinate of the point $F$ is	(3)	6
(S)	Co-ordinates of point $O$ is	(4)	7
(T)	The perpendicular distance of the point $A$ from the $x$ -axis is	(5)	0
(U)	The perpendicular distance of the point $B$ from the $y$ -axis is	(6)	$(-5, 3)$

Ans : P – 6, Q – 5, R – 1, S – 2 T – 3, U – 4

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**5. ASSERTION AND REASON**

**DIRECTION :** In each of the following questions, a statement of Assertion is given followed by a corresponding statement of Reason just below it. Of the statements, mark the correct answer as

- (a) Both assertion and reason are true and reason is the correct explanation of assertion.
- (b) Both assertion and reason are true but reason is not the correct explanation of assertion.
- (c) Assertion is true but reason is false.
- (d) Assertion is false but reason is true.

1. **Assertion :** The points  $(-3, 5)$  and  $(5, -3)$  are at different positions in the coordinate plane.

**Reason :** If  $x \neq y$ , then  $(x, y) \neq (y, x)$

Ans : (a) Both assertion and reason are true and reason is the correct explanation of assertion.

$(-3, 5)$  and  $(5, -3)$  are different points as  $(-3, 5)$  lies in II quadrant and  $(5, -3)$  lies in IV quadrant. Also, abscissas and ordinates of both points are different.

2. **Assertion :** The point  $(-5, 0)$  lies on  $y$ -axis and  $(0, -4)$  on  $x$ -axis.

**Reason :** Every point on the  $x$ -axis has zero distance from  $x$ -axis and every point on the  $y$ -axis has zero distance from  $y$ -axis.

Ans : (d) Assertion is false but reason is true.

$(-5, 0)$  lies on  $x$ -axis where as  $(0, -4)$  lies on  $y$ -axis. Every point on  $x$ -axis has zero distance from  $x$ -axis and every point of  $y$ -axis has zero distance from  $y$ -axis.

