

ORIENTING YOURSELF : THE USE OF CO-ORDINATES

Multiple Choice Questions

- Q 1. The point at which the two coordinate axes meet is called the:
(a) Abscissa (b) Ordinate
(c) Origin (d) Quadrant
- Q 2. Which of the points $P(0,3)$, $Q(1,0)$, $R(0,-1)$, $S(-5,0)$, $T(1,2)$ do not lie on x -axis?
(a) P and R only (b) Q and S only
(c) P , R and T (d) Q , S and T
- Q 3. If $x > 0$ and $y < 0$, the point $(x, -y)$ lies in
(a) Quadrant I (b) Quadrant II
(c) Quadrant III (d) Quadrant IV
- Q 4. If the point $P(x, y)$ lies in the fourth quadrant, then:
(a) $x > y$ (b) $x < y$
(c) $x > -y$ (d) $y > -x$
- Q 5. Coordinates of two points are given by $A\left(\frac{13}{2}, 5\right)$ and $B\left(4, -\frac{2}{13}\right)$. The value of (abscissa of A - ordinate of B) is:
(a) $\frac{165}{26}$ (b) $-\frac{165}{26}$ (c) $\frac{173}{26}$ (d) $-\frac{173}{26}$
- Q 6. A lamp post has to be fixed right at the centre of a rectangular lawn as shown in the figure. At what distance from a corner should the lamp post be fixed?
(a) 25 m (b) 35 m (c) 50 m (d) 70 m
- Q 7. The point $A(k, k - 2)$ lies in the first quadrant. Another point $M(m, 2m - 5)$ is such that m is equal to the least possible integer value of k . Which of these statements is true?
(a) Point M lies in the first quadrant.
(b) Point M lies in the second quadrant.
(c) Point M lies in the third quadrant.
(d) Point M lies in the fourth quadrant.



Assertion-Reason Based Questions

The following questions are Assertion and Reason based questions. Two statements are given, one labelled as Assertion (A) and the other is labelled as Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below.

- (a) Both A and R are true, and R is the correct explanation of A .
- (b) Both A and R are true, but R is not the correct explanation of A .
- (c) A is true, but R is false.
- (d) A is false, but R is true.

- Q8. Assertion (A) : If ordinate of a point is positive, then the point lies above the x -axis.
Reason (R) : If ordinate of a point is -2 and the abscissa of the point is -3 , the point lies in IV quadrant.
- Q9. Assertion (A) : All the points $A(2,0)$, $B(-2,0)$, $C(0,3)$ and $D(0,-3)$ lie on the coordinate axes.
Reason (R) : Every point on x -axis is of the form ($x, 0$) and every point on y -axis is of the form ($0, y$).

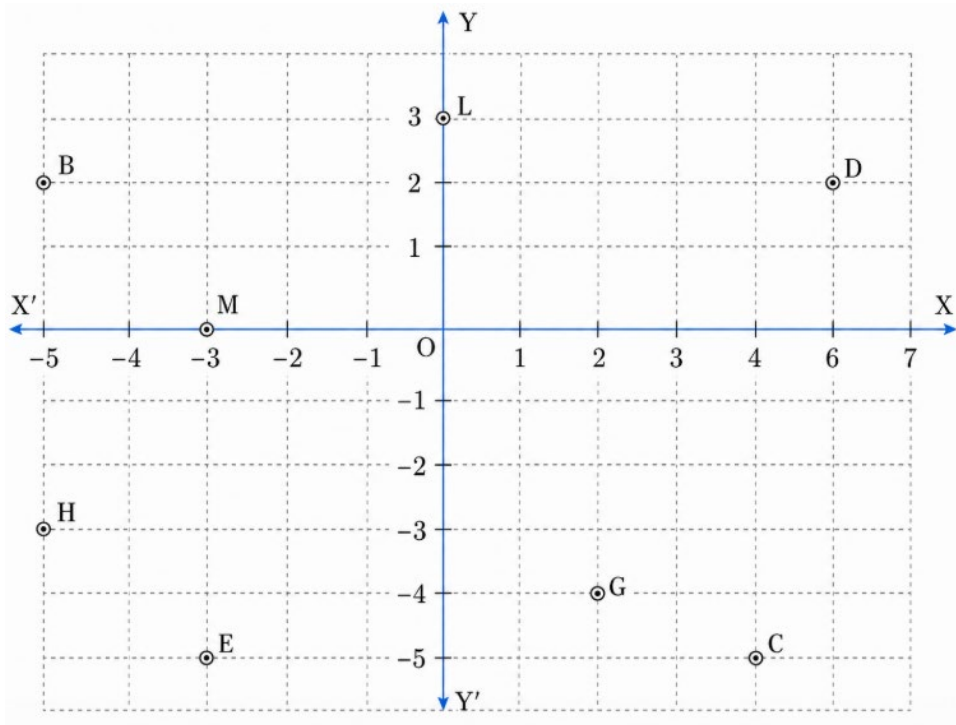
Very Short Answer Questions

- Q 10. If a point is at a distance of 4 units in the positive direction of x -axis and at a distance of 2 units below x -axis, then find its coordinates.
- Q11. Where will you find all points (a, b), when $a < 0, b > 0$?
- Q 12. If $(2a, 3b) = (0, -6)$, then find the values of a and b .

Short Answer Questions

- Q 13. Look at the figure given below and write the following:
- (i) The coordinates of the point B
 - (ii) The coordinates of the point C
 - (iii) The point identified by the coordinates $(-3, -5)$
 - (iv) The point identified by the coordinates $(2, -4)$
 - (v) The abscissa of the point D
 - (vi) The ordinate of the point H
 - (vii) The coordinates of the point L
 - (viii) The coordinates of the point M .

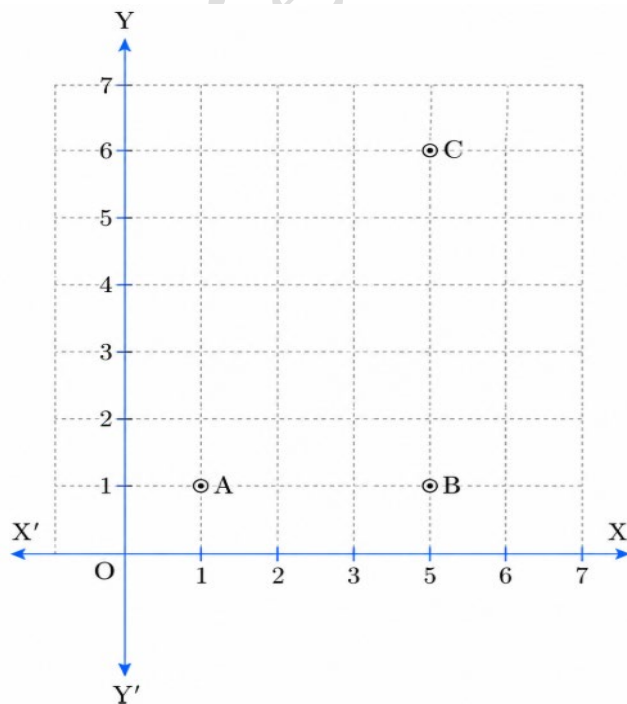




Q 14. Observe the given grid and answer the following questions:

(i) Find the sum of abscissa of coordinates of A and B.

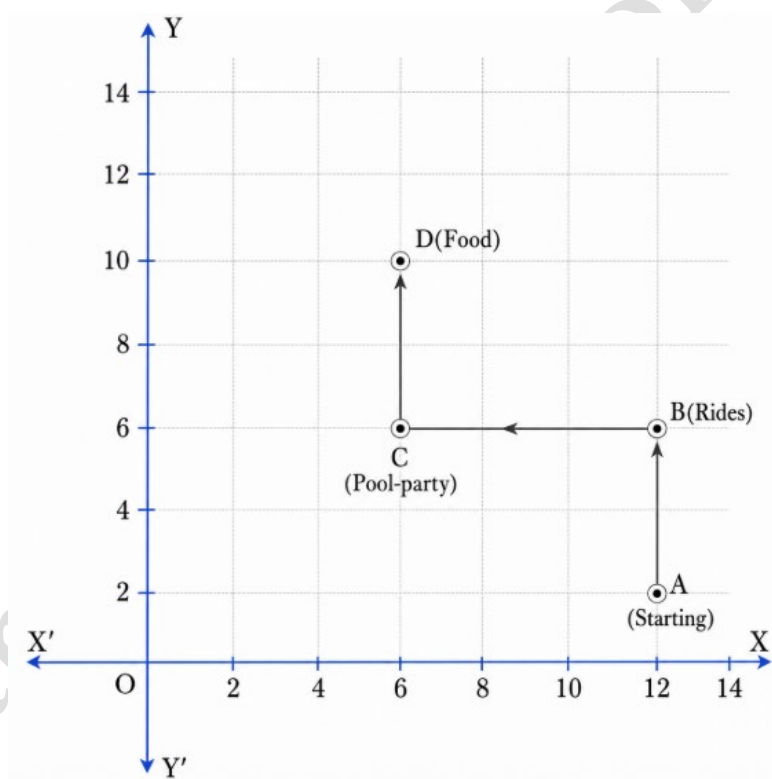
(ii) If ABCD represents the vertices of a rectangle. Plot the point D and write its coordinates.



Case Study Based Questions

Q 15. Reema and her family went to enjoy the adventure park during the weekend in summer. Reema was very excited for this. She decided to form the map by labelling the places with alphabets. By this, she was able to enjoy the park as well as utilise the time effectively. Positions of all the places are represented by the following graph. Based on the above information, answer the following questions.

- (i) What are the coordinates of point C ?
- (ii) What is the value of abscissa of point D ?
- (iii) What is the value of ordinate of point A ?
- (iv) How far is B from the starting point A ?
- (v) How far is B from the pool party C ?



ANSWER KEY

1. C 2. C 3. A 4. A 5.C 6.A 7.A
8. C 9. A
10. $(4, -2)$
11. quadrant II
12. $a = 0, b = -2$
13. (i) $(-5, 2)$ (ii) $(5, -5)$ (iii) E (iv) G
(v) 6 (vi) -3 (vii) $(0, 3)$ (viii) $(-3, 0)$
14. (i) 7 (ii) $(2, 6)$
15. (i) $(6, 6)$ (ii) 6 (iii) 2 (iv) 4 units (v) 6 units



Class : IXTH

Date :

Subject : MATHS

DPP No. : 2

ORIENTING YOURSELF : THE USE OF CO-ORDINATES

Multiple Choice Questions

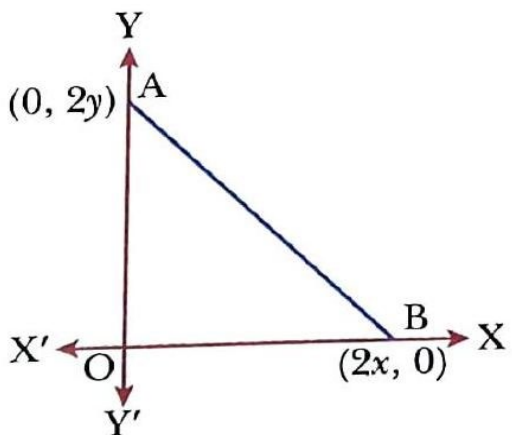
- Q 1. The distance of point $P(1, -1)$ from x -axis is:
(a) 1 unit (b) -1 unit
(c) 0 units (d) $\sqrt{2}$ units
- Q 2. The distance of a point A from x -axis is 3 units. Which of the following cannot be coordinates of the point A ?
(a) (1,3) (b) $(-3, -3)$
(c) $(-3, 3)$ (d) (3,1)
- Q 3. The distance of which of the following points from origin is less than 5 units?
(a) (3,4) (b) (2,6)
(c) $(-3, -4)$ (d) (1,4)
- Q 4. The distance between the points (a, b) and $(-a, -b)$ is:
(a) $\sqrt{a^2 + b^2}$ (b) $2\sqrt{a^2 + b^2}$
(c) $\sqrt{3a^2 + 3b^2}$ (d) $4\sqrt{a^2 + b^2}$
- Q 5. The distance between the points $(-\frac{8}{5}, 2)$ and $(\frac{2}{5}, 2)$ is:
(a) 2 units (b) $\sqrt{2}$ units
(c) 6 units (d) 8 units
- Q 6. $AOBC$ is a rectangle whose three vertices are $A(0,2)$, $O(0,0)$ and $B(4,0)$. The square of the length of its diagonal is equal to:
(a) 36 (b) 20
(c) 16 (d) 4
- Q 7. The perimeter of the triangle formed by the vertices $(0,0)$, $(2,0)$ and $(0,2)$ is:
(a) 4 units (b) 6 units
(c) $6\sqrt{2}$ units (d) $(4 + 2\sqrt{2})$ units



Q 8. The endpoints of a diameter of circle are $(2,4)$ and $(-3,-1)$. The length of its radius is:

- (a) $\frac{5\sqrt{2}}{2}$ units (b) $5\sqrt{2}$ units
(c) $3\sqrt{2}$ units (d) $\pm \frac{5\sqrt{2}}{2}$ units

Q9. The coordinates of the point which is equidistant from the three vertices of the $\triangle AOB$ as shown in the figure is:



- (a) (x, y) (b) (y, x)
(c) $(\frac{x}{2}, \frac{y}{2})$ (d) $(\frac{y}{2}, \frac{x}{2})$

Q 10. The vertices of a parallelogram in order are $A(1,2)$, $B(4, y)$, $C(x, 6)$, $D(3,6)$, then the value of x and y respectively, are:

- (a) 6, 2 (b) 3, 6
(c) 5, 6 (d) 1, 4

Assertion-Reason Based Questions

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(b) Both A and R are true, but R is not the correct explanation of A .
(c) A is true, but R is false.
(d) A is false, but R is true.



Q11. Assertion (A) : The distance between the points $P(2a, 2b)$, $Q(-3a, -3b)$ is $5\sqrt{a^2 + b^2}$.

Reason (R) : The distance between the points $P(x_1, y_1)$ and $Q(x_2, y_2)$ is

$$\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}.$$

Q 12. Assertion (A) : Points $(1,5)$, $(2,3)$ and $(-2, -11)$ are collinear.

Reason (R) : Three points are said to be collinear, when they all lie on the same line.

Very Short Answer Questions

Q 13. Find the distance between the points $P\left(-\frac{11}{3}, 5\right)$ and $Q\left(-\frac{2}{3}, 5\right)$.

Q 14. Find the values of x if the distance between $P(4,0)$ and $Q(0, x)$ is 5 units.

Q 15. Find a relation between x and y if the point (x, y) is equidistant from the points $(1,2)$ and $(7,0)$.

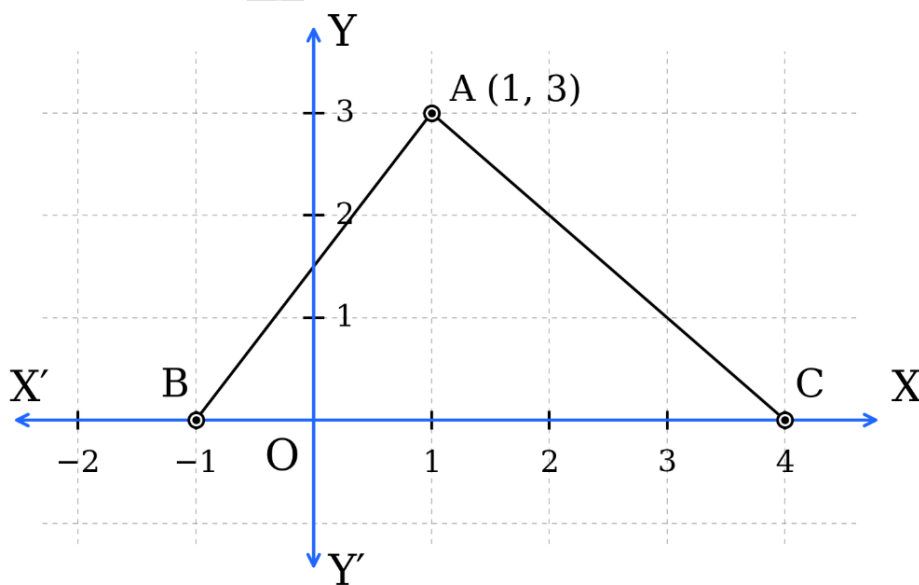
Q 16. Find the coordinates of a point A , where AB is a diameter of the circle with centre $(-2,2)$ and B is the point with coordinates $(3,4)$.

Short Answer Questions

Q 17. Prove that the points $(3,0)$, $(6,4)$ and $(-1,3)$ are the vertices of a right angled isosceles triangle.

Q 18. Find the perimeter of a triangle with vertices $(0,4)$, $(0,0)$ and $(3,0)$.

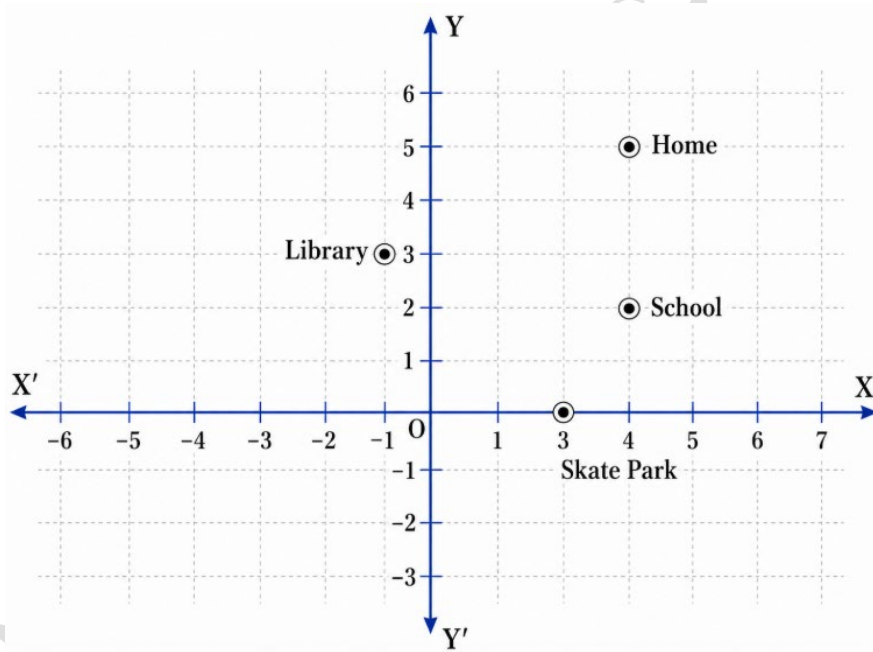
Q 19. In the given figure, find the area of the triangle ABC (in sq. units).



- Q 20. Show that the points $A(3,5)$, $B(6,0)$, $C(1,-3)$ and $D(-2,2)$ are the vertices of a square $ABCD$.
- Q 21. The points $A(4,7)$, $B(p, 3)$ and $C(7,3)$ are the vertices of a right triangle, right angled at B . Find the value of p .

Case Study Based Questions

- Q22. Two brothers, Mahesh and Sudhir, were at home and needed to get to school. Mahesh first went to the library to return a book before heading directly to school, while Sudhir stopped at the skate park to meet a friend before going directly to school. The places have been shown in a coordinate plane. Here all distances are in km .



Based on the above information, answer the following questions:

- (i) Find the coordinates of the point marked as library.
- (ii) Find the coordinates of the point marked as home.
- (iii) (a) What is the extra distance travelled by Mahesh to reach his school?

OR

- (b) What is the extra distance travelled by Sudhir to reach his school?



SMART ACHIEVERS
JEE | NEET | FOUNDATION

Web: www.smartachievers.online
Phone: +91-7292077839 / 7292047839

ANSWER KEY

1.a	2.d	3.d	4.b	5.a	6.b
7.d	8.a	9.a	10.a	11.c	12.d

13. 3 units 14. ± 3

14. $3x - y = 11$

15. $(-7, 0)$

16. 12 units

17. $\frac{15}{2}$ sq. units

18. $p = 4$

19. (i) $(-1, 3)$ (ii) $(4, 5)$ (iii) (a) $(\sqrt{29} + \sqrt{26} - 3)$ km OR (b) $(\sqrt{26} + \sqrt{5} - 3)$ km

20. (i) $(-1, 3)$ (i) HINTS TO SELECTED QUESTIONS

21. Use the distance formula to get the length of the diagonal AB and square it.

22. Perimeter of a triangle = sum of the lengths of its three sides.

23. First find the distance between the endpoints (this is the diameter), then take half of it to get

24. In a parallelogram, diagonals bisect each other-so the midpoint of AC equals the midpoint the radius.

