CHAPTER TEST: COORDINATE GEOMETRY
Mathematics | Class IX (2026/COORGD/09/003)

Time: 1.5 Hours **Max. Marks: 40**

General Instructions:

1. All questions are compulsory.
2. Section A contains 8 MCQs (1 mark each).
3. Section B contains 4 Very Short Answer questions (2 marks each).
4. Section C contains 3 Short Answer questions (3 marks each).
5. Section D contains 2 Long Answer questions (5 marks each).
6. Section E contains 1 Case Study (5 marks total).

Section A (Multiple Choice Questions)

1. If the coordinates of a point are (x, y) and $xy > 0$, then the point lies in:
   (a) I or II quadrant
   (b) I or III quadrant
   (c) II or IV quadrant
   (d) IV or I quadrant

2. The point $(a, -a)$ for all non-zero values of a always lies on:
   (a) The X-axis
   (b) The Y-axis
   (c) The line $y = x$
   (d) The line $y = -x$

3. The ordinate of any point on the X-axis is:
   (a) 1
   (b) -1
   (c) 0
   (d) Any number

4. Abscissa of a point is negative in:
   (a) I and II quadrants
   (b) II and III quadrants
   (c) III and IV quadrants
   (d) IV and I quadrants

5. If $P(-1, 1), Q(3, -4), R(1, -1), S(-2, -3)$ and $T(-4, 4)$ are plotted on the graph paper, then the point(s) in the fourth quadrant are:

(a) P and T

(b) Q and R

(c) Only S

(d) P and R

6. The distance of the point $(3, 5)$ from the X-axis is:

   (a) 3 units

   (b) 5 units

   (c) 8 units

   (d) $\sqrt{34}$ units

7. A point whose abscissa is -3 and which lies on the X-axis is:

   (a) $(-3, 0)$

   (b) $(0, -3)$

   (c) $(-3, -3)$

   (d) $(3, 0)$

8. The area of the triangle formed by the points $(0, 0), (0, 6)$ and $(8, 0)$ is:

   (a) 48 sq. units

   (b) 14 sq. units

   (c) 24 sq. units

   (d) 10 sq. units

Section B (Very Short Answer Questions)

1. If the perpendicular distance of a point P from the X-axis is 5 units and the foot of the perpendicular lies on the negative direction of X-axis at a distance of 3 units from the origin, find the coordinates of P. (2)

2. Plot the points $A(4, 4)$ and $B(-4, 4)$. Join OA, OB and AB. What figure do you obtain? (2)

3. Write the coordinates of the point: (i) Whose ordinate is $-1/2$ and abscissa is 5. (ii) Whose abscissa is $-3/2$ and lies on the X-axis. (2)

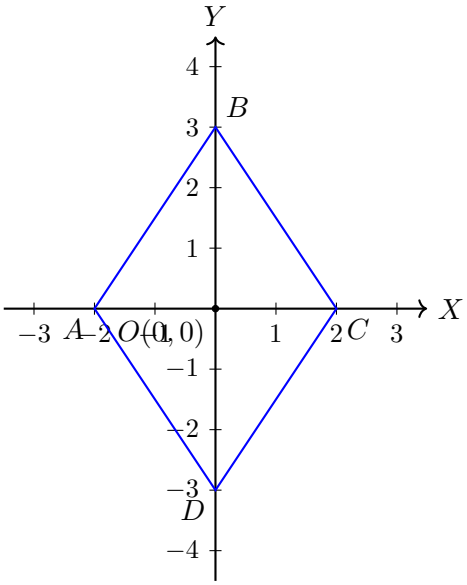
4. Find the coordinates of the point which lies on both the axes. Why is this point unique? (2)

Section C (Short Answer Questions)

1. Plot the following points and check if they are collinear: $A(1, 1), B(2, 2), C(4, 4)$. Justify your answer based on the linear relationship observed. (3)

2. A point $P(2, 3)$ is reflected in the X-axis to P'. P' is then reflected in the Y-axis to P''. Find the coordinates of P' and P''. In which quadrant does P'' lie? (3)

3. In the given figure, $ABCD$ is a rhombus. Find the coordinates of its vertices.



(3)

Section D (Long Answer Questions)

1. Plot the points $A(-2, 3), B(4, 3), C(4, -2)$ and $D(-2, -2)$ on a Cartesian plane. (i) Identify the type of quadrilateral $ABCD$. (ii) Calculate the perimeter of the figure by finding the lengths of its sides through grid units. (iii) Find the coordinates of the mid-point of side AB. (5)

2. (i) Draw a coordinate plane and plot the points $L(0, 2), M(3, 2), N(0, 5)$. (ii) Join these points to form a triangle. (iii) Find the area of $\triangle LMN$. (iv) If the triangle is shifted 2 units to the right, what will be the new coordinates of M? (5)

Section E (Case Study Based Question)

Case Study: The Air Traffic Control Center

An Air Traffic Control (ATC) center uses a large coordinate grid to monitor the positions of aircraft within its sector. The ATC tower is positioned at the origin $(0, 0)$. Two private jets, Jet A and Jet B, are currently being tracked. Jet A is reported at coordinates $(6, 8)$, while Jet B is located at $(-6, 8)$. The safety officer needs to ensure that planes maintain a safe distance from various high-altitude restricted zones. One such zone is a rectangular region defined by the coordinates $(-2, 2), (2, 2), (2, -2)$, and $(-2, -2)$. A weather balloon is also floating exactly on the Y-axis, 5 units below the ATC tower. By using the Cartesian system, the controller can quickly tell the pilots their position relative to the North-South (Y-axis) and East-West (X-axis) baselines, ensuring efficient and safe navigation through the crowded skies.

Based on the above information, answer the following questions:

1. What is the position (coordinates) of the weather balloon?

   (a) $(5, 0)$

   (b) $(0, 5)$

(c) $(0, -5)$

(d) $(-5, 0)$

2. Jet A and Jet B are symmetric with respect to which axis?

   (a) X-axis

   (b) Y-axis

   (c) Both axes

   (d) Origin

3. What is the abscissa of Jet B?

   (a) 8

   (b) -6

   (c) 6

   (d) -8

4. Which quadrant is currently free of both Jet A and Jet B?

   (a) Quadrant I and II

   (b) Quadrant III and IV

   (c) Quadrant II and III

   (d) Quadrant I and IV

5. The restricted zone's center is located at:

   (a) $(2, 2)$

   (b) $(0, 0)$

   (c) $(-2, -2)$

   (d) $(1, 1)$