



Orienting Yourself: The Use of Coordinates

Total Marks: 20 | Time: 45 mins | Difficulty: Difficult | Medium: English

Name: _____

Roll No.: _____

Date: _____

Marks: ____ / 20

Instructions

- Attempt all questions.
- Use a graph sheet for plotting questions wherever needed.
- Show clear working for distance, collinearity and area questions.
- Use the scale 1 cm = 1 unit unless another scale is given.

Section A - Very Short Answer Questions

5 x 1 = 5

- Q1.** If a point lies on the y-axis, what is its x-coordinate? [1 mark]
- Q2.** In which quadrant does $(-a, b)$ lie if $a > 0$ and $b > 0$? [1 mark]
- Q3.** Write the reflection of $P(7, -3)$ in the y-axis. [1 mark]
- Q4.** When do $P(x, y)$ and $Q(y, x)$ represent the same point? [1 mark]
- Q5.** Write the coordinates of a point which is 5 units left of the origin on the x-axis. [1 mark]

Section B - Short Answer Questions

5 marks

- Q6.** Explain why negative numbers are needed to locate all points in the Cartesian plane. [2 marks]
- Q7.** For $R(3, 0)$, $A(0, -2)$, $M(-5, -2)$ and $P(-5, 2)$, joined in order, identify: (i) one pair of perpendicular sides, (ii) one side parallel to an axis, and (iii) two points that are mirror images in an axis. [3 marks]

Section C - Application / Word Problems

3 x 2 = 6

- Q8.** Find the distance between $A(-3, 4)$ and $B(6, -8)$. [2 marks]
- Q9.** A city has streets 200 m apart. An intersection is marked $(4, 3)$, measured from the city centre along perpendicular roads. Find its straight-line distance from the city centre. [2 marks]
- Q10.** A screen is 800 pixels wide and 600 pixels high. A circular icon of radius 100 pixels has centre $B(250, 230)$. Check whether the icon lies fully inside the screen. [2 marks]

Section D - Challenge / HOTS Questions

2 x 2 = 4

- Q11.** Without plotting, check whether $M(-3, -4)$, $A(0, 0)$ and $G(6, 8)$ lie on one straight line. Use a distance-based method. [2 marks]
- Q12.** Plot $A(2, 1)$, $B(-1, 2)$, $C(-2, -1)$ and $D(1, -2)$. Decide whether ABCD is a square and find its area.

