



# O Level Maths

## Topic: Cartesian Coordinates

### Instructions

Answer all questions. Show all necessary steps. Use the Cartesian coordinate system effectively.

### Practice Problems

#### Plotting Points in the Coordinate Plane:

1. Plot the following points on the Cartesian plane:  $A(2, 3)$ ,  $B(-1, -4)$ ,  $C(0, 5)$ ,  $D(4, -2)$ .
2. Find the distance between the points  $P(1, 2)$  and  $Q(4, 6)$ .
3. Find the midpoint of the line segment joining the points  $M(3, -1)$  and  $N(-2, 4)$ .
4. Determine the coordinates of the point that divides the line segment joining  $A(1, 2)$  and  $B(5, 6)$  in the ratio 2:3.

#### Equations of Lines:

5. Find the equation of the line passing through the points  $A(2, 3)$  and  $B(4, 7)$ .
6. Write the equation of the line parallel to  $2x + 3y = 6$  and passing through the point  $(1, -2)$ .
7. Determine the slope and y-intercept of the line given by the equation  $4x - 5y = 10$ .
8. Find the equation of the line passing through  $P(2, 3)$  and having a slope of  $m = 2$ .

## Multiple-Choice Questions

1. The distance between the points  $A(2, 3)$  and  $B(4, 6)$  is:
  - A.  $\sqrt{10}$
  - B. 5
  - C. 3
  - D.  $\sqrt{13}$
2. The midpoint of the segment joining  $(1, 2)$  and  $(3, 4)$  is:
  - A.  $(2, 3)$
  - B.  $(1, 1)$
  - C.  $(3, 2)$
  - D.  $(4, 5)$
3. Which of the following is the equation of a line parallel to the line  $y = 2x + 3$ ?
  - A.  $y = 2x - 1$
  - B.  $y = 3x + 2$
  - C.  $y = -2x + 1$
  - D.  $y = x + 2$
4. What is the slope of the line represented by the equation  $5x - 3y = 9$ ?
  - A. 5
  - B.  $-3/5$
  - C.  $3/5$
  - D.  $-5$
5. The point  $(0, 4)$  lies on the graph of the line with equation:
  - A.  $y = 2x + 4$
  - B.  $y = 4x - 4$
  - C.  $x = 4y$
  - D.  $y = -4x + 4$

Visit our website: [Mathaversity.com](https://mathaversity.com)