

Coordinate Geometry: Circles

Question Paper 2

Level	A Level
Subject	Maths
Exam Board	OCR
Topic	Coordinate Geometry & Graphs
Sub Topic	Coordinate Geometry: Circles
Booklet	Question Paper 2

Time Allowed: 47 minutes

Score: /39

Percentage: /100

- 1 The points $A(1, 3)$, $B(7, 1)$ and $C(-3, -9)$ are joined to form a triangle.
- (i) Show that this triangle is right-angled and state whether the right angle is at A , B or C . [5]
 - (ii) The points A , B and C lie on the circumference of a circle. Find the equation of the circle in the form $x^2 + y^2 + ax + by + c = 0$. [7]
- 2 (i) The line joining the points $A(4, 5)$ and $B(p, q)$ has mid-point $M(-1, 3)$. Find p and q . [3]
- AB is the diameter of a circle.
- (ii) Find the radius of the circle. [2]
 - (iii) Find the equation of the circle, giving your answer in the form $x^2 + y^2 + ax + by + c = 0$. [3]
 - (iv) Find an equation of the tangent to the circle at the point $(4, 5)$. [5]
- 3 (i) Find the equation of the circle with radius 10 and centre $(2, 1)$, giving your answer in the form $x^2 + y^2 + ax + by + c = 0$. [3]
- (ii) The circle passes through the point $(5, k)$ where $k > 0$. Find the value of k in the form $p + \sqrt{q}$. [3]
 - (iii) Determine, showing all working, whether the point $(-3, 9)$ lies inside or outside the circle. [3]