3.2 Coordinate Geometry of the Circle: 10-minute Pack

AQA 8365 · Calculator allowed · about 10 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 A circle has equation $x^2 + y^2 = 100$.

(a) Show that the point (8, 6) lies on the circle. **(2)**

(b) Determine whether the point (9, 5) lies inside or outside the circle. You must show working to justify your answer. **(2)**

(Total for Question 1 is 4 marks)

2 Write down the radius of the circle $x^2 + y^2 = 1$.

(Total for Question 2 is 1 mark)

3 A(2, 0) and B(-4, 4) are the end points of a diameter of a circle. Find the equation of the circle.

(Total for Question 3 is 4 marks)

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Mark scheme · 3.2 Coordinate Geometry of the Circle: 10-minute Pack

Question 1

(a) substitutes $8^2 + 6^2$ **M1**

(a) = 64 + 36 = 100, cso, so the point lies on the circle **A1**

(a) Answer: $8^2 + 6^2 = 100$, so (8, 6) lies on the circle

(b) substitutes $9^2 + 5^2 = 106$ **M1**

(b) 106 > 100 so the point lies outside the circle, ft their value **A1**

(b) Answer: Outside the circle

Question 2

1 cao **B1**

Answer: radius = 1

Question 3

centre = midpoint = (-1, 2) **M1**

radius^2 from a distance calculation **M1**

radius^2 = 13 **A1**

$(x + 1)^2 + (y - 2)^2 = 13$ oe cao **A1**

Answer: $(x + 1)^2 + (y - 2)^2 = 13$

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