adamjee maths

A-LEVEL MATHS / EDEXCEL / FREE RESOURCES

Surds and indices

Question paper

2 questions

Exam questions and marking instructions remain credited to their board.

Contents

1 June 2025 - Paper 1 - Q2

2 October 2021 - Paper 1 - Q7

2. The circle C has equation

$$(x + 3)^2 + (y - 4)^2 = 24$$

(a) (i) State the coordinates of the centre of C.

(ii) Find the radius of C writing your answer as a fully simplified surd.

(3)

(b) Determine, giving a reason, whether or not the origin lies inside the circle C.

(2)

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Question 2 continued

(Total for Question 2 is 5 marks)

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7. The circle C has equation

$$x^2 + y^2 - 10x + 4y + 11 = 0$$

(a) Find

(i) the coordinates of the centre of C,

(ii) the exact radius of C, giving your answer as a simplified surd.

(4)

The line l has equation $y = 3x + k$ where k is a constant.

Given that l is a tangent to C,

(b) find the possible values of k, giving your answers as simplified surds.

(5)

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Question 7 continued

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Question 7 continued

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Question 7 continued

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