

- 4 (a) Find the exact value of the root of the equation $e^{3x} = 8$

Give your answer in the form $\ln a$, where a is an integer.

(2)

The curve C_1 has equation $y = 2e^{3x}$ and the curve C_2 has equation $y = (e^{3x} - 4)^2$

The curves C_1 and C_2 intersect at the points P and Q .

- (b) Use algebra to find the exact coordinates of the points P and Q .

(5)

- (c) Find, to 3 decimal places, the length of PQ .

(2)

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Question 4 continued

Ruled area for writing the answer to Question 4 continued.



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Question 4 continued

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Question 4 continued**(Total for Question 4 is 9 marks)**

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