

8 The curve C_1 has equation $y = 5e^{-2x} + 4$

The curve C_2 has equation $y = e^{2x}$

The curves C_1 and C_2 intersect at the point A .

(a) Find the exact coordinates of A .

(4)

The tangent at A to C_1 intersects the x -axis at the point B .

(b) Show that the x coordinate of B is $\frac{1}{2}(5 + \ln 5)$

(5)

The tangent at A to C_2 intersects the x -axis at the point D .

(c) Find the area of $\triangle ABD$.

(6)

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Question 8 continued

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Question 8 continued

(Total for Question 8 is 15 marks)



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