

The diagram shows the curve  $y = 3e^{2x-1}$ . The shaded region is bounded by the curve and the lines x = a, x = a + 1 and y = 0, where a is a constant. It is given that the area of the shaded region is 120 square units.

<b>1</b> )	Show that $a = \frac{1}{2} \ln(80 + e^{2a-1}) - \frac{1}{2}$ .	[5]

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<b>(b)</b>	Use an iterative formula, based on the equation in part (a), to find the value of a corresponding to a significant figures. Give the result of each iteration to 5 significant figures.	ect to [3]