Question	Answer	Marks	Guidance
(a)	Use quotient rule (or equivalent) to find first derivative	*M1	Condone poor use of brackets if recovered later
	Obtain $\frac{18e^{2x}(e^x-1)-e^x(9e^{2x}+16)}{(e^x-1)^2}$	A1	OE
	Equate first derivative to zero and attempt factorisation	DM1	Need to be working with $9e^{3x}-18e^{2x}\pm16e^x=0$
	Obtain $e^x(3e^x-8)(3e^x+2)=0$	A1	AG – necessary detail needed **SC B3** If numerator is in incorrect order and given result is obtained. **SC B3** If denominator is not squared and given result is obtained.
		4	
(b)	Observe, using given result from part **(a)**, at some stage, $e^x\neq0$ and $3e^x+2\neq0$ and hence one stationary point	B1	Allow if discounted by crossing through OE
	Attempt exact solution for x and for y	M1	
	Obtain $x=\ln(\frac{8}{3})$ or exact equivalent	A1	
	Obtain $y=48$	A1	Not from a rounded decimal
		4	