

Question			Answer	Marks	AO	Guidance
9	(a)		$(f'(x) =) \quad 3x^2 + 3e^{3x}$	B1	1.1	$3x^2$ or ke^{3x} where $k = 1, 3$ or $\frac{1}{3}$ - Implied by correct answer
				B1 [2]	1.1	Fully correct derivative
9	(b)		$(0, 1)$	B1 [1]	1.1	- Or $x = 0, y = 1$. 1 alone is not sufficient. - Condone omission of brackets
9	(c)		$\frac{dy}{dx} = \frac{1}{\frac{dx}{dy}}$ so gradient is $\frac{1}{\text{their gradient of } y=f(x) \text{ (where it crosses } y\text{-axis)}}$	M1	3.1a	- Consideration of relationship between gradients of the two curves where they cross the relevant axes. May be shown in a diagram with sketch of any increasing function reflected in $y = x$ - Implied by correct answer FT <i>their</i> derivative
			Alternative method for M1 $x = y^3 + e^{3y}$ $1 = 3y^2 \frac{dy}{dx} + 3e^{3y} \frac{dy}{dx}$ $\frac{dy}{dx} = \frac{1}{3y^2 + 3e^{3y}}$	M1		- Clear attempt to use implicit differentiation to find $\frac{dy}{dx}$ - Implied by correct answer
			$\frac{1}{3}$	A1 [2]	1.1	nfww