Question Number	Scheme	Marks
2.(a)	$\frac{dy}{dx} = 8xe^{2x} + 8x^2e^{2x}$	M1A1A1 (3)
(b)	$x\frac{dy}{dx} = 8x^2e^{2x} + 8x^3e^{2x}$ $= 8x^2e^{2x}(1+x)$ $= 2y(1+x)$ *	M1 A1cso (2)
	ALT: Reverse argument: M1 correct method; A1 fully correct	**[5]**

Notes

M1 for an attempt at product rule. There must be two terms added. There must be an attempt at differentiating BOTH terms (usual rules for differentiation)

A1 for ONE term correct, need **not** be simplified

A1 for BOTH terms correct, need **not** be simplified. Award when seen and isw any attempts at simplification.

M1 for multiplying their $\frac{dy}{dx} = 8xe^{2x} + 8x^2e^{2x}$' through by x on BOTH sides

A1 for a correct factorized expression. **Note**: this is a show question so look out for 'fudging' of their work to achieve the given answer.

ALT

You will see attempts working from the given answer which is fine.

M1 For substituting $4x^2e^{2x}$ substituted into $2y(1+x)$ to give;

$2\times 4x^2e^{2x}(1+x) \Rightarrow 8x^2e^{2x} + 8x^3e^{2x}$

A1 for multiplying their $\frac{dy}{dx}$ by x **and** comparing the result, to verify