Question	Answer	Marks	Guidance
9(a)	Derivative of e^{2x}: $2e^{2x}$ soi	**B1**	
	$x \times 2e^{2x} + e^{2x}$ isw	**B1**	**FT** *their* $2e^{2x}$
9(b)	[When $x = 1$] $y = e^2$	**B1**	
	[gradient tangent =] *their* $\left.\frac{dy}{dx}\right\|_{x=1}$	**B1**	**FT** *their* derivative which must include at least one term in e^{2x}
	Gradient of normal = $\frac{-1}{\textit{their}(3e^2)}$	**B1**	**FT** $\frac{-1}{\textit{their}\left.\frac{dy}{dx}\right\|_{x=1}}$
	$y - e^2 = \frac{-1}{3e^2}(x - 1)$ oe, isw	**B1**	**dep** on 2 marks awarded in part (a) and all previous marks awarded in this part
9(c)	$\left[xe^{2x} - \frac{1}{2}e^{2x}\right]_0^2$	**M3**	**M2** for $xe^{2x} + ke^{2x}$ where $k < 0$ or $k = \frac{1}{2}$ or **M1** for $\int 2xe^{2x}dx = xe^{2x} - \int e^{2x}dx$
	$\left(2e^4 - \frac{1}{2}e^4\right) - \left(-\frac{1}{2}\right)$	**A1**	
	$1.5e^4 + 0.5$ or exact equivalent	**A1**	
10(a)	$a + 4d = 11$ oe	**B1**	
	$a + 6d = 3(a + d)$ oe	**B1**	
	Correctly eliminates one unknown and solves for a or d	**M1**	**FT** *their* linear equations in a and d providing **B1** earned.
	$d = 2,\ a = 3$	**A1**	