

Question		Answer	Mark	AO	Guidance
4	(a)	$10 = e^{3x}$ $3x = \ln 10$ $x = \frac{1}{3} \ln 10$ or 0.768	M1 A1 [2]	1.1a 1.1	Attempt to take logs of $10 = e^{3x}$ 0.767528... Allow answer in range [0.767, 0.768] Answer only (without working) SCB1
4	(b)	Gradient = $3e^{3x}$ Gradient of tangent at $x = 2$ is $3e^6$ or 1210	M1 A1 [2]	1.1a 1.1	soi. Allow ke^{3x} for this mark ($k \neq 1$) or sight of $3e^{3(2)}$ 1210.286... isw if numerical form inaccurate (but do not accept -1/m if the perpendicular gradient is given as the final answer) Answer only (without working) SCB1