Question	Answer	Marks	Partial Marks
7	Eliminates one variable e.g. $x^2 = 5(x^2 - 2x + 1) - 1$ or $y = 5y - 1 - 2\sqrt{5y - 1} + 1$	**M1**	
	Collects terms ready to solve e.g. $4x^2 - 10x + 4 = 0$ or $4y^2 - 5y + 1 = 0$	**A1**	
	Factorises, applies the formula or completes the square e.g. $2(2x - 1)(x - 2)$ or $(4y - 1)(y - 1)$	**M1**	
	Both $(0.5,\ 0.25)$ and $(2, 1)$	**A2**	**A1** for either $(0.5, 0.25)$ or $(2, 1)$ provided nfww or $x = 0.5, 2$ or $y = 0.25, 1$
8(a)	Valid explanation e.g. Each value of x is mapped to a unique value of y.	**B1**	
8(b)	$-5 \leqslant f \leqslant 1$	**B1**	
8(c)	$a = 3, b = 0.75$ oe, $c = -2$	**B4**	**B1** for $a = 3$ **B1** for $c = -2$ **M1** for $\frac{2\pi}{b} = \frac{8\pi}{3}$ oe **A1** for $b = 0.75$ oe

Question	Answer	Marks	Partial Marks
9	$\frac{\mathrm{d}(\mathrm{e}^{3x})}{\mathrm{d}x} = 3\mathrm{e}^{3x}$ soi	**B1**	
	Applies product rule to e.g. numerator: *their*$(3\mathrm{e}^{3x})\sin x + \mathrm{e}^{3x}\cos x$	**M1**	or to $x^{-2}\sin x$: $x^{-2}\cos x + (-2x^{-3})\sin x$ or to $\mathrm{e}^{3x} \times x^{-2}$: $\mathrm{e}^{3x} \times (-2x^{-3}) + \textit{their}(3\mathrm{e}^{3x}) \times x^{-2}$
	Correct quotient rule: $\frac{x^2\left(\textit{their}\left(3\mathrm{e}^{3x}\sin x + \mathrm{e}^{3x}\cos x\right)\right) - 2x(\mathrm{e}^{3x}\sin x)}{x^4}$	**M1**	or applies product rule for a second time e.g. : $x^{-2}(\textit{their}\left(3\mathrm{e}^{3x}\right)\sin x + \mathrm{e}^{3x}\cos x) +$ $(-2x^{-3})(\mathrm{e}^{3x}\sin x)$
	Fully correct derivative; isw	**A1**	
	$\delta y = \textit{their}\left(\left.\frac{\mathrm{d}y}{\mathrm{d}x}\right\|_{x=0.5}\right) \times h$	**M1**	
	7.14*h* or 7.137[66...]*h* with coefficient rot to 4 or more figs isw	**A1**	Answer only, without working, scores **SC1**
10(a)(i)	Correct method to find inverse	**M1**	
	$\mathrm{g}^{-1}(x) = \frac{1}{x-3}$ oe	**A1**	
10(a)(ii)	$\mathrm{g}^{-1} \geqslant 1$ or $[1, \infty)$	**B1**	
10(a)(iii)	$3 < x \leqslant 4$ or $(3, 4]$	**B2**	**B1** for 3 and 4 in an incorrect inequality or for $x > 3$ or $x \leqslant 4$