Question	Answer	Marks	Partial Marks
10(a)(ii)	Correctly collects terms ready to factorise e.g. $4x^2 - 4x^2y^2 = 1$ or $4y^2x^2 - 4y^2 = -1$ or simplifies to subject in one term only e.g. $\frac{1}{4y^2} = 1 - x^2$ or $-\frac{1}{4x^2} = y^2 - 1$ oe	**M1**	
	Correctly factorises and/or rearranges at least as far as: $x^2 = \frac{1}{4 - 4y^2}$ or $y^2 = \frac{-1}{4x^2 - 4}$ oe	**M1**	**FT** only if of equivalent difficulty
	$\left[f^{-1}(x) =\right] \sqrt{\frac{1}{4 - 4x^2}}$ or $[y =] \sqrt{\frac{-1}{4x^2 - 4}}$ oe, isw	**A1**	
10(b)	Correct order of composition: $gf(x) = e^{\left(\frac{\sqrt{4x^2-1}}{2x}\right)^2}$	**M1**	
	$gf(x) = e^{\left(1 - \frac{1}{4x^2}\right)}$ isw	**A1**	
11(a)(i)	$\frac{(10x-1)^{-5}}{-5 \times 10}(+c)$ isw	**B2**	**B1** for $k\frac{(10x-1)^{-5}}{-5}(+c)$, where $k \neq \frac{1}{10}$
11(a)(ii)	$\int\left(4x^5 + 20x^2 + \frac{25}{x}\right)dx$	**B1**	
	$\frac{4}{6}x^6 + \frac{20}{3}x^3 + 25\ln x + c$	**B2**	**B1** for any 3 terms correct
11(b)(i)	$3\sec^2(3x+1)$	**B2**	**B1** for $k\sec^2(3x+1)$ where $k \neq 3$

Question	Answer	Marks	Partial Marks
11(b)(ii)	$\int \frac{\sec^2(3x+1)}{2}\,dx = \frac{\tan(3x+1)}{6}$ oe, soi	**B1**	
	$-\int \sin x\,dx = \cos x$ oe	**B1**	
	$F\left(\frac{\pi}{10}\right) - F\left(\frac{\pi}{12}\right)$ where $F(x) = k_1 \tan(3x+1) + k_2 \cos x$ oe	**M1**	
	0.322 or 0.3222[32...] rot to 4 figs	**A1**	
12	For $0 \leqslant t \leqslant 2$: $\int \frac{t}{2e}\,dt = \frac{t^2}{4e}$	**B1**	
	For $t > 2$: $\int e^{-\frac{t}{2}}\,dt = -2e^{-\frac{t}{2}} + \frac{3}{e}$ oe	**B2**	**B1** for $\int e^{-\frac{t}{2}}\,dt = -2e^{-\frac{t}{2}}(+c)$ oe
	$-2e^{-\frac{3}{2}} + \frac{3}{e} - \frac{1}{4e}$ OR $\left(-2e^{-\frac{3}{2}} + \frac{3}{e} - \frac{1}{e}\right) + \left(\frac{1}{e} - \frac{1}{4e}\right)$	**M2**	**M1** for $[s(1) =]\ \frac{1}{4e}$ **and** $[s(3) =] -2e^{-\frac{3}{2}} + their\frac{3}{e}$ or at least one term correct in the difference: $\left(-2e^{-\frac{3}{2}} + their\frac{3}{e}\right) - \frac{1}{4e}$ or for one bracket correct in: $\left(-2e^{-\frac{3}{2}} + their\frac{3}{e} - \frac{1}{e}\right) + \left(\frac{1}{e} - \frac{1}{4e}\right)$
	0.565 or 0.5654 to 0.56541 nfww	**A1**	