Question	Answer	Marks	Partial marks
3	$\frac{3\sqrt{x+2}}{\sqrt{x+2}+4}=1$ soi OR $g(x)=f^{-1}(1)$ and $f^{-1}(x)=\frac{4x}{3-x}$ oe	**2**	**M1** for $f(\sqrt{x+2})$ $[=1]$ soi or for $g(x)=f^{-1}(1)$ soi
	$x=2$ nfww	**2**	**M1 FT** for correct equation without an algebraic fraction e.g. $\sqrt{x+2}=2$ **FT** *their* $\frac{3\sqrt{x+2}}{\sqrt{x+2}+4}=1$ providing **M1** previously awarded and fg(x) is an algebraic fraction
	Alternative method		
	Solves $\frac{3x}{x+4}=1$ to find $x = 2$ and states $g(x)=2$	**(2)**	**M1** for solving $f(x)=1$ to find $x = k$ and states $g(x)=k$, where k is a constant
	$x=2$ nfww	**(2)**	**M1 FT** for $\sqrt{x+2}=k$ **FT** $g(x)=k$ *their* providing **M1** previously awarded

Question	Answer	Marks	Partial marks
4(a)	$\left[\frac{dy}{dx}=\right]$ $4\left(\cos 2x(2\cos 2x)+\sin 2x(-2\sin 2x)\right)$ oe	**M1**	Use of the product rule with correct structure
	$\left[\frac{dy}{dx}=\right]$ $4\left(\cos 2x(2\cos 2x)+\sin 2x(-2\sin 2x)\right)$ oe, isw	**A1**	
	$\left[\left.\frac{dy}{dx}\right\|_{x=\frac{\pi}{6}}=\right] 4\left(2\cos^2\frac{2\pi}{6}-2\sin^2\frac{2\pi}{6}\right)$ oe	**M1**	**dep** on previous **M1** **FT** *their* $\frac{dy}{dx}$ providing it is of the form $a\cos^2 2x - b\sin^2 2x$ or equivalent where *a, b* are positive integers
	$\left[\left.\frac{dy}{dx}\right\|_{x=\frac{\pi}{6}}=\right] -4$	**A1**	