Question			Answer	Marks	AO	Guidance
17			divide through by $\cos x$ to obtain $2\tan x + \sec^2 x = 4$	**B1**	**2.1**	
			$2\tan x + \tan^2 x + 1 = 4$	**M1***	**3.1a**	use of Pythagoras to obtain equation in $\tan x$ only; allow 1 sign error
			$\tan^2 x + 2\tan x - 3[= 0]$	**A1**	**1.1**	
			$\tan x = 1$ *or* -3	**M1*dep**	**1.1**	2 values obtained for $\tan x$ from their quadratic
			[x =] –1.24905 to –1.249 or –1.25 or –1.2 [x =] 1.8925 to 1.893 or 1.89 or 1.9	**A1**	**3.2a**	any two correct
			[x =] $\frac{\pi}{4}$ or 0.785 to 0.7854 or 0.79 [x =] $-\frac{3\pi}{4}$ or –2.3562 to –2.356 or –2.36 or –2.4	**A1**	**2.2a**	all four correct and **no extra** values in range; ignore **correct** extra values outside range but **A0** if incorrect values outside range
				[6]		

Question			Answer	Marks	AO	Guidance
			alternatively multiply through by $\cos x$ to obtain			
			$2\sin x\cos x + 1 = 4\cos^2 x$	**B1**		
			$\sin 2x + 1 = 2\cos 2x + 2$	**M1***		use of double angle formulae, allow 1 sign error
			$5\cos^2 2x + 4\cos 2x$ [= 0]	**A1**		or $\sqrt{5}\cos(2x + 0.4636 \ldots) = -1$
			NB square both sides: $\sin^2 2x = 4\cos^2 2x + 4\cos 2x + 1$ **oe**			or $\sqrt{5}\sin(2x - 1.1071 \ldots) = 1$
			$\cos 2x = 0$ or -0.8	**M1dep***		$\cos(2x + 0.4636 \ldots) = -\frac{1}{\sqrt{5}}$ **or** $\sin(2x - 1.1071 \ldots) = \frac{1}{\sqrt{5}}$
			2 values obtained for $\cos 2x$ from their quadratic			
			[x =] –1.24905 to –1.249 or –1.25 or –1.2			
			[x =] 1.8925 to 1.893 or 1.89 or 1.9	**A1**		any two correct
			[x =] $\frac{\pi}{4}$ or 0.785 to 0.7854 or 0.79			
			[x =] $-\frac{3\pi}{4}$ or –2.3562 to –2.356 or –2.36 or –2.4	**A1**		all four correct and **no extra** values in range; ignore **correct** extra values outside range but **A0** if incorrect values outside range