Question			Answer	Marks	AO	Guidance
3	(a)		**DR**			
			$4\sin^2\theta = \dfrac{\sin^2\theta}{\cos^2\theta}$	**B1**	**1.1**	Not incorrect notation, eg $\left(\dfrac{\sin}{\cos}\right)^2\theta$
			$\cos^2\theta = \dfrac{1}{4}$	**M1**	**1.1**	Attempt ÷ bs by $\sin^2\theta$ & √bs, rearrange to this form. Allow errors.
			$\cos\theta = \pm\dfrac{1}{2}$ or $2\cos\theta = \pm1$			
			Alternative method for M1 $4\sin^2\theta\cos^2\theta = \sin^2\theta$ $4\sin^4\theta - 3\sin^2\theta = 0$ $\sin^2\theta = \dfrac{3}{4}$ M1 $\sin\theta = \pm\dfrac{\sqrt{3}}{2}$ Allow $\sin\theta = \dfrac{\sqrt{3}}{2}$			Similar for finding quartic equation in $\cos\theta$ Attempt use $s^2 + c^2 = 1$, rearrange to quartic in $\sin\theta$ & obtain $\sin^2\theta$ = ... or $\sin\theta$ = ... Allow errors . Other methods, see below.
			$\theta = 60^o$	**A1**	**1.1**	
			or 120^o	**A1**	**1.1**	Allow 240^o and/or 300^o but no other extras
			or $\sin\theta = 0$, $\theta = 0^o$ or 180^o	**B1**	**1.1**	Allow 360^o but no other extras
			Summary Any largely correct method obtaining $\cos^2\theta$ = ... or $\sin^2\theta$ = ... B1M1 60^o and 120^o A1A1 0^o and 180^o A1	**[5]**		or $\cos\theta$ = ... or $\sin\theta$ = ... Allow errors

Question			Answer	Marks	AO	Guidance
3	(b)		**DR**			
			$\frac{1-\cos^2\theta-1+\cos\theta}{1-\cos\theta}$ $\left(\equiv \frac{\cos\theta-\cos^2\theta}{1-\cos\theta}\right)$	**M1**	**1.1**	Use of $\sin^2\theta + \cos^2\theta = 1$ to obtain correct fraction in cos only
			$\equiv \frac{\cos\theta(1-\cos\theta)}{1-\cos\theta}$	**A1**	**1.1**	Correct factorised numerator
			$\equiv \cos\theta$	**A1**	**2.2a**	Must see previous line and result. Allow = instead of ≡ throughout Allow no mention that $\cos\theta \neq 1$.
				[3]		
			Example of an alternative method			
			$\frac{1-\cos^2\theta-1+\cos\theta}{1-\cos\theta} = \cos\theta$ M1			
			$-\cos^2\theta + \cos\theta = \cos\theta(1-\cos\theta)$ A1			Any correct manipulation of the original identity that finishes with a statement that is correct
			$-\cos^2\theta + \cos\theta = \cos\theta - \cos^2\theta$ A1			