Question			Answer	Mark	AO	Guidance
4			**DR** $3\sin^4\phi + \sin^2\phi - 4 = 0$			
			$(3\sin^2\phi + 4)(\sin^2\phi - 1) = 0$	**B1**	**2.1**	Attempt to solve QE in $\sin^2\phi$ or QE in u with $u = \sin^2\phi$ soi **Must see method**
			$\sin^2\phi = -\frac{4}{3}$ or $\sin^2\phi = 1$ (or $\sin\phi = 1$)	**B1**	**1.1**	May be implied from $x = \sin^2\phi$ and $x = -\frac{4}{3}$ or 1
			$\sin^2\phi = -\frac{4}{3}$ is impossible	**B1**	**2.3**	oe, eg $\sin\phi \neq \sqrt{-\frac{4}{3}}$ **Not** with incorrect reason, eg $\sin^2\phi = \frac{16}{9} > 1$
			$\phi = \sin^{-1}(\pm 1)$	**M1**	**1.1**	solve for ϕ Allow $\phi = \sin^{-1}(1)$, may be implied
			$\phi = \frac{1}{2}\pi, \ \frac{3}{2}\pi$ No extras within range Allow "correct" extras outside range	**A1**	**2.2a**	Both. dep $\sin^2\phi = -\frac{4}{3}$ and $\sin^2\phi = 1$ (or $\sin\phi = 1$) seen
				[5]		SC $\phi = \frac{1}{2}\pi, \ \frac{3}{2}\pi$ with no working: B2