

Question			Answer	Marks	AO	Guidance
14			$5 - \cos \theta - 6(1 - \cos^2 \theta) = 0$	B1	3.1a	Using the correct identity. May be seen anywhere in the working. Condone poor notation such as missing arguments.
			$6 \cos^2 \theta - \cos \theta - 1 = 0$	M1	2.1	Simplifies to 3 term quadratic in cosine and sets equal to 0. Can score this mark if $1 + \cos^2 \theta$ used (gives an unsolvable quadratic).
			eg $(3\cos \theta + 1)(2\cos \theta - 1) = 0$	M1	1.1	Attempt to solve a quadratic in cosine- may see use of quadratic formula; allow sign errors only in either method. Calculator methods not acceptable here- detailed reasoning required.
						If using QF a correctly quoted formula followed by a slip in the substitution of values scores M1, but if the formula isn't quoted and there are errors in the substitution then M0.
			$\cos \theta = \frac{1}{2}$ and $\cos \theta = -\frac{1}{3}$ seen	A1	1.1	
			<u>60° and 300° or 109° and 251°</u> or <u>60° and 109°</u>	A1	1.1	A complete solve for either trig equation or two 'first values' obtained: allow 109.47... and 250.53...; or e.g. 109.5 and 250.5 (or awrt 109 and 251)

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			all 4 correct with no extras	A1	1.1	SC 1: If the candidate uses a calculator to obtain $\cos\theta = \frac{1}{2}$ and $\cos\theta = -\frac{1}{3}$ then proceeds to a fully correct solution, then award SC 4/6 SC 2: If the candidate uses a calculator to obtain $\cos\theta = \frac{1}{2}$ and $\cos\theta = -\frac{1}{3}$ then proceeds to partially correct solution with at least two correct values then award SC 3/6
				[6]		