

STEP III, 2013 , Q8 EC

8. A seventh answered this question, making it the second least attempted question scoring a third of the marks possible. The first result evaded many candidates who did not identify and calculate the geometric progression, although a few did employ the fact that the sum of the roots of unity is zero. The result for s caused few problems and was for many candidates the only success in the question. Those that attempted the length of the chord were comfortable with the algebra of trigonometry namely $\cos(\theta + \pi) = -\cos \theta$, and $2 \cos^2 \theta - 1 = \cos 2\theta$. There was mixed success with completing the final result.



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