

## STEP III, 2015 , Q8 EC

8. This was a little less popular than question 1, but still was attempted by more than 80% of candidates, and was the question with highest scores. Many managed part (i) although several candidates did not realise that  $r$  was a function of  $\theta$ . Part (ii) was generally fine as far as the transformed differential equation but then the correct use of partial fractions to integrate having separated variables was less frequent than it should have been. A surprising number made no attempt to sketch any solutions despite doing the rest of the question either well or perfectly. Nobody realised that the constant  $A$  was truly arbitrary in part (ii) because of the modulus signs appearing in the log terms from the integral. The sketches tested all but the best.



# NextStepMaths.com

To view mark schemes, fully worked solutions and examiner's comments, and for more details about tutoring and other services offered, go to [NextStepMaths.com](https://www.NextStepMaths.com)