

## STEP III, 2011 Q8 EC

8. The response rate of this was similar to question 4, but with success rate similar to question 2. Most students did reasonably well getting half to three quarters of the marks by finding  $u$  and  $v$  and doing part (i), and then getting hold of (ii) and (iii) or not. Part (iv) rightly discriminated the strong candidates from the generality. A few alternative methods were tried but mostly they had their limitations. Details like omitted points from loci and the negative sign that arises when using the cosine double angle formula frequently lost marks.



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