

STEP III, 2016 , Q2 EC

Question 2

This question was quite popular, being attempted by just over three-quarters of the candidates, but success was moderate. Most got underway differentiating implicitly, rather than parametrically, and were able to find equations of tangents, normal and chords, but not always simplifying by factorising to make their lives easier; those who could factorise made good progress, whilst those who did not struggled to find (i). Other weaknesses were not appreciating that they could find $r + q$ and rq , which then led to not finding the certain point in (ii). In the final part, square rooting the inequality and only considering the positive case was not uncommon.



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