

STEP II, 2022, Q5 EC

Question 5

Many candidates appear to have spent a little time on this question before deciding to concentrate on others, meaning that the marks in general for this question were very low.

In part (i) it was often unclear whether the candidate was using all of the conditions and in many cases the inequalities were written as strict when they should not have been.

In part (ii) most candidates were able to write down a correct formula for the area and part (b) was also generally answered well, although in some cases the candidates appeared to guess the best point, rather than deduce it from the previous part. The incentre was a common incorrect guess for at least one of the parts.

Candidates were generally most successful in part (iii)(a) with many convincing attempts seen. Fewer than half of the scripts progressed beyond this point, however. Those who did attempt part (iii)(b) managed to complete it quite well, although a common mistake was to simply square the answer from part (ii)(b) and claim that it all works out.

There were very few attempts at part (iv), mostly trying to use previous parts or to guess a point. For both of the last two parts, some candidates correctly identified the maximum or minimum, but did not convincingly show where it was attained.



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