

## STEP III, 2024, Q7 EC

### Question 7

The third most popular question, this was a little less successfully attempted than question 2 with a mean score of just over 9/20.

Parts (i) and (ii) were not generally well done, as it was easy to guess the geometric series and then make unsubstantiated, or at least unjustified, claims which could not be given full marks.

In part (ii), there was frequently lack of clarity regarding pairing of terms and arguments lacking in necessary detail to support the claims.

Part (iii) was done better, though the second result commonly saw  $1/e$  expanded as a reciprocal rather than as  $e^{-1}$ , and then, as a consequence, getting lost.

Part (iv), too, was fairly well done. There was a good understanding of contradiction arguments for part (v), though there was difficulty in choosing a suitable  $n$  in quite a few cases.



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