

STEP III, 2015 , Q2 EC

2. Nearly three quarters attempted this, though again with moderate success as the main feature of the question was proof, and this was frequently handled cavalierly. Whilst it was not a crucial aspect of the question, ignoring the fact that the question deals with sequences of positive numbers was careless. Answers to the first part suffered at times from lack of argument or backwards logic. Part (ii) was generally well answered, although there were some silly counter-examples. This part suffered from those who completely missed the point of what the question was all about, forgetting the initial definition. Whilst most appreciated that part (iv) was true, there were many different methods used to attempt to prove it, and often unsuccessfully. Whilst induction using algebra is fairly straightforward, differentiation with or without logarithms and graphical methods frequently came to grief.



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