

## STEP II, 2012, Q1 EC

**Q1** The first question is set with the intention that everyone should be able to attempt it, but 20% of candidates were clearly put off by the algebraic nature of this year's opener. It was, nonetheless, the most popular question on the paper, possibly due to the lack of any advanced techniques. The specifically numerical parts of the question were generally more confidently, and hence successfully, handled than the general ones. So, for instance, formulae for the various coefficients in (i) were often not correct, even when high marks were scored on the question. When numerical answers went astray, it was usually due to incorrect signs in the early stages, with candidates failing to realise that all terms were positive. The very final demand (for the coefficient of  $x^{66}$ ) was the real test, not only of candidates' resilience and nerve but also of their grasp of where the various contributions were coming from. From a marking point of view, very few candidates gave particularly clear methods, and it was usually difficult for the markers to decipher the underlying processes from what appeared to be merely a whole load of numbers written down and added up.



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