

STEP II, 2006, Q13 EC

- 13 To be honest, this was more of a counting question than anything, at least to begin with, and several candidates picked up relatively large amounts of marks for very little working. Whilst several attacked (i) by multiplying and adding various probabilities, it was possibly most easily approached by looking at the 24 permutations of $\{1, 2, 3, 4\}$ individually. Those candidates who adopted a *mix- 'n' -match* approach without explanation often got themselves into a bit of a muddle, but still picked up several of the marks available here.

The example provided by (i) was intended to help direct candidates' thinking in (ii) as well as give them with a non-trivial case to use as a check. Of the attempts received, many explained things very poorly, even when they arrived at the correct expression. Sadly, rather too many seemed to deduce the (correct) answer on the basis of (i)'s example alone, and seemed unable to grasp that anything needed to be explained or justified.



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