

STEP II, 2020, Q12 EC

This question had the second smallest number of attempts on the paper. Many of these successfully completed the first part of the question, but then made little progress in the later sections.

Part (i) was generally well done, although some candidates did not appreciate that $\sum \varepsilon_i = 0$ when determining whether a fair or biased die is more likely to show the same score on two successive rolls. Where candidates were able to see the connection between the first and second parts of the question, the required result was generally proven clearly.

Part (iii) could be approached in a similar way to part (i), but many of the candidates who reached this point failed to deal with the more complicated terms that arise from the expansion. Correct solutions to this part were generally very well set out.



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