



STEP II, 2015, Q12 EC

Question 12

Many solutions to this question did not include sufficient explanation to gain full credit. In the first part, marks were not awarded simply for stating that the value of $\frac{1}{4}$ could be achieved by multiplying $\frac{1}{2}$ by $\frac{1}{2}$ (often with an additional multiplication by 1) – an explanation of where this calculation comes from was also required. In the second part a number of candidates stated that it was symmetric and so the answer must be $\frac{1}{4}$ but with insufficient explanation why. In part (iii), some candidates obtained a geometric series which was then summed to get the probability of C winning if the first two tosses are TT. In the final part some correct answers were offered, but without explanation of the method. A number of candidates made incorrect assumptions such as that $p+q=1$, or $p+q+r=1$. When finding the probability that C wins a lot of candidates were able to achieve some of the marks by working out the probability in terms of q .



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