PROBLEM OF THE MONTH

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Problem. Frank Ilett, a dedicated Manchester United (MU) fan, promised not to get a haircut until his team wins five consecutive games. MU has recently improved and now has a 70% chance (probability $= 0.7$) of winning any individual game. We want to answer the following question: on average how many games will Frank need to watch before MU wins five games in a row and he can get his haircut?

(1) Write some code to simulate this experiment and estimate the expected number of games.

(2) Use mathematical reasoning to verify the simulation's result.

Scan the following QR code for submission instructions.