

Assignment 2

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Download all python codes from

<https://github.com/Yagna20/AI1103/blob/main/Assignment%202/assignment%202.py>

and latex-tikz codes from

<https://github.com/Yagna20/AI1103/blob/main/Assignment%202/assignment%202.tex>

1 PROBLEM Q.47

A fair dice is tossed two times. The probability that the second toss results in a value that is higher than the first toss is

2 SOLUTION

Let X_1 and X_2 represent the first toss and second toss respectively.

$$\begin{aligned}
 \Pr(X_2 > X_1) &= \sum_{n=1}^6 \Pr(X_2 > n / X_1 = n) \\
 &= \sum_{n=1}^6 \frac{\Pr(X_2 > n \& X_1 = n)}{\Pr(X_1 = n)} \\
 &= \sum_{n=1}^6 \Pr(X_2 > n) \quad (2.0.1) \\
 &= \frac{15}{36} \\
 &= \frac{5}{12}
 \end{aligned}$$