

Assignment 1

AI1110: Probability and Random Variables
Indian Institute of Technology Hyderabad

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Question 13.2.12:

Problem Statement

A die is tossed thrice. Find the probability of getting an odd number at least once.

Solution

Let X be a random variable defined as the number of odd number occurrences in three trials. Probability of an observation being odd is;

$$p = \frac{1}{2} \quad (1)$$

$$n = 3 \quad (2)$$

Let $F_X(i)$ be the **Cumulative distribution function**(CDF) such that;

$$F_X(i) = \sum_0^i \Pr(X) \quad (3)$$

Required probability is equivalent to;

$$\Pr(1 \leq X \leq 3) = F_X(3) - F_X(0) \quad (4)$$

$$= \frac{7}{8} \quad (5)$$

Python code: [1]

REFERENCES

- [1] https://github.com/Gunethra/AI1110_2023/tree/master/Assignment_1/code.

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