

Assignment 1 in L^AT_EX

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Probability and Random Variables

Problem Statement:

A die is thrown once. Find the probability of getting (i) a prime number; (ii) a number lying between 2 and 6; (iii) an odd number

Solution: Let set **S** include all possible outcomes of a fair dice roll. Then **S** = {1, 2, 3, 4, 5, 6}, considering all elements of **S** are equally likely to occur.

'A' = Event that the number is prime = {2, 3, 5}

'B' = Event that the number is between 2 and 6 = {3, 4, 5}

'C' = Event that the number is odd = {1, 3, 5}

$$\Pr(A) = \frac{n(A)}{n(S)} = \frac{3}{6} = 0.5 \quad (1)$$

$$\Pr(B) = \frac{n(B)}{n(S)} = \frac{3}{6} = 0.5 \quad (2)$$

$$\Pr(C) = \frac{n(C)}{n(S)} = \frac{3}{6} = 0.5 \quad (3)$$

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