Assignment 1 in LaTeX

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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:

i) Probability of getting a prime number = $\frac{Number\ of\ primes\ in\ \mathbf{S}}{Number\ of\ elements\ in\ \mathbf{S}} = \frac{3}{6} = 0.5$

ii) Probability of getting a number between 2 and 6 = $\frac{Numbers\ less\ than\ 6\ and\ more\ than\ 2\ in\ \mathbf{S}}{Number\ of\ elements\ in\ \mathbf{S}} = \frac{3}{6} = 0.5$

iii) Probability of getting an odd number = $\frac{Number\ of\ odd\ numbers\ in\ \mathbf{S}}{Number\ of\ elements\ in\ \mathbf{S}} = \frac{3}{6} = 0.5$

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