Assignment 3

AI1110: Probability and Random Variables

INDIAN INSTITUTE OF TECHNOLOGY, HYDERABAD

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CS22BTECH11016

12.13.1.14: Given that the two numbers appearing on throwing two dice are different. Find the probability of the event the sum of numbers on the dice is 4.

Solution:

Event	Favorable Outcomes	Total Outcomes
Rolling two dice with different numbers	30	36
Getting a sum of 4 when rolling two dice with different numbers	2	30

The probability of rolling two dice with different numbers and getting a sum of 4 is:

$$Pr = \frac{\text{Number of favorable outcomes}}{\text{Total number of possible outcomes}} \tag{1}$$

$$= \frac{2}{30} \tag{2}$$

$$= \frac{1}{15} \tag{3}$$

Therefore, the probability of the event ‘the sum of numbers on the dice is 4, given that the two numbers appearing on throwing two dice are different’ is 1/15.