

ASSIGNMENT-1

Probability & Random Variables

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BT22BTECH11012

Question

Two dice are thrown at the same time. Determine the probability that the difference of the numbers on the two dice is 2.

Solution

The total number of sample space in two dice,

$$n(S) = 6 * 6 = 36$$

Let E = Event of getting the numbers whose difference is 2

$$E = (1, 3), (2, 4), (3, 5), (4, 6), (6, 4), (5, 3), (4, 2), (3, 1)$$

Such that:

$$n(E) = 8$$

and

$$n(S) = 36$$

Thus,

$$P(E) = \left(\frac{n(E)}{n(S)} \right)$$

$$P(E) = \left(\frac{8}{36} \right) = \left(\frac{2}{9} \right)$$

∴ required Probability is $P(E) = \left(\frac{2}{9} \right)$