Assignment 1
AI1110: Probability and Random Variables
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Chapter 13 , Exercise 13.2

Question 17 : The Probability of obtaining an even prime number on each die , when a pair of dice is rolled is :

(A)

1) 0

2) $\dfrac{1}{3}$

3) $\dfrac{1}{12}$

4) $\dfrac{1}{36}$

Solution:

When a pair of dice is rolled The sample space is $\mathbb{S} = \{(x,y) : x,y \in \{1,2,3,4,5,6\}\}$ $\therefore$ $n(\mathbb{S}) = 6 \times 6 = 36$.

Let Event E : an even prime number on each die . Since 2 is the only even prime number , E $= \{(2,2)\}$

$\therefore n(E) = 1$

Required Probability $= P(E) = \dfrac{1}{36}$

(D) is the correct option.