# Assignment

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AI21MTECH02003

## I. GATE 7

Problem: Given Set A = [2,3,4,5] and Set B = [11,12,13,14,15], two numbers are randomly selected,one from each set. What is probability that the sum of the two numbers equals 16?

(a) 0.20

(b) 0.25

(c) 0.30

(d) 0.33

**Solution**    Given A = [2,3,4,5] and Set B = [11,12,13,14,15] . the possible combinations of selecting one number from each set is :

= {(2,11),(2,12),(2,13),(2,14),(2,15),(3,11),(3,12),(3,13), (3,14),(3,15),(4,11),(,4,12),(4,13),(4,14),(4,15),(5,11), (5,12),(5,13),(5,14),(5,15)

From the above sample space have a cardinality of 20 . The samples that sums up to 16 are
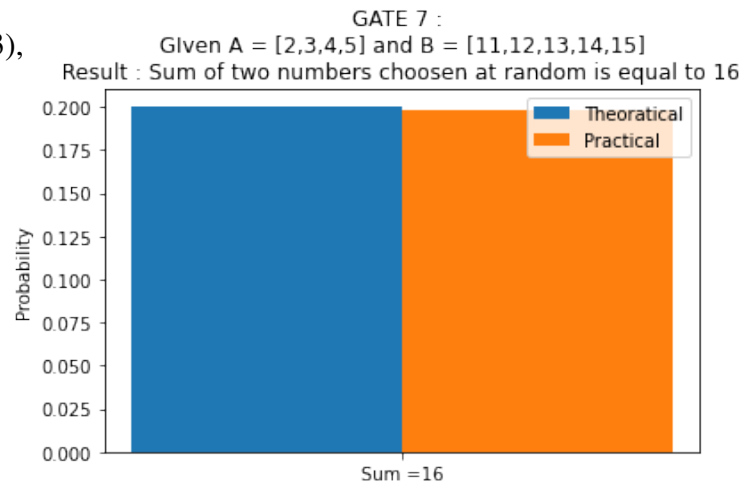
= (2,14),(3,13),(4,12),(5,11)

Cardinality of the favourable events is : 4

$$\text{probability} = \frac{\text{Favourable sample space}}{\text{Total number of outcomes}}$$
$$\text{probability} = \frac{4}{20}$$
$$\text{probability} = 0.2$$

The required probability of getting a sum of 16 when choosing two numbers in random is 0.2



GATE 7 :
Given A = [2,3,4,5] and B = [11,12,13,14,15]
Result : Sum of two numbers choosen at random is equal to 16

Code source: https://github.com/harshal9876/ AI5002/blob/main/Assignment_8/Codes/ Assignemnt_8.py

LaTex    code    :    https://github.com/ harshal9876/AI5002/blob/main/Assignment_ 8/Assignment_8.tex