**Given: Consider two six-sided faces namely Die A and Die B with faces numbered from 1 to 6. Both the dice are rolled together.**

*# dice has 6 faces*

**number\_of\_faces = 6**

**number\_of\_dices = 2**

**1 . How many total combinations are possible? Show the math along with the code?**

*# if two dices are rolled together then total combinations would be (number\_of\_faces) ^ (number\_of\_dices)*

total\_combinations **=** (number\_of\_faces) **\*\*** (number\_of\_dices)

print(f"Total Combinations are {total\_combinations}.")

A screenshot of a computer

Description automatically generated

**2 . Calculate and display the distribution of all possible combinations that can be obtained when rolling both Die A and Die B together.**

*# declare a list to store the distribution*

distributions **=** []

*# calculate distributiions and append result to distributions list*

**for** dice\_1 **in** range(1, number\_of\_faces **+** 1):

**for** dice\_2 **in** range(1, number\_of\_faces **+** 1):

total\_comb **=** dice\_1 **+** dice\_2

result **=** {

"Sum" : total\_comb,

"Die A" : dice\_1,

"Die B" : dice\_2

}

distributions**.**append(result)

print(distributions)

A screen shot of a computer

Description automatically generated

**3 . Calculate the Probability of all Possible Sums occurring among the number of combinations from (2).Example: P(Sum = 2) = 1/X as there is only one combination possible to obtain Sum = 2. Die A = Die B = 1.**

probability **=** {}

**for** dice\_1 **in** range(1, number\_of\_faces **+** 1):

**for** dice\_2 **in** range(1, number\_of\_faces **+** 1):

total **=** dice\_1 **+** dice\_2

probability[str(total)] **=** str(probability**.**get(total, 0) **+** 1) **+** f"/{total\_combinations}"

A screenshot of a computer

Description automatically generatedprint(probability)

<https://github.com/METTUYAMINI/securin_coding_task>