dieA = [1,2,3,4,5,6]

dieB = [1,2,3,4,5,6]

#total number of combinations

nCombinations = pow(6,2)

print("Total combinations possible: ", nCombinations)

#Calculate and display the distribution of all possible combinations

nA = len(dieA)

nB = len(dieB)

distribution = [[0 for \_ in range(nA)] for \_ in range(nB)]

sum\_count = {i: 0 for i in range(2, 13)}

for i in dieA:

for j in dieB:

total = i + j

distribution[i-1][j-1] = total

sum\_count[total] += 1

print(f"Die A = {i}, Die B = {j}, Sum = {total}")

for row in distribution:

print(row)

#Calculate the Probability of all Possible Sums

# Initialize a dictionary to count occurrences of sums

sum\_count = {i: 0 for i in range(2, 13)} # Possible sums range from 2 to 12

# Loop through all possible combinations of rolls

for roll\_1 in dieA:

for roll\_2 in dieB:

# Calculate the sum of the two dice rolls

total = roll\_1 + roll\_2

# Increment the count for this sum

sum\_count[total] += 1

# Calculate and print the probability for each sum

for sum\_value, count in sum\_count.items():

probability = count / nCombinations

print(f"P(Sum = {sum\_value}) = {probability:.4f}")