

Code explanations are provided in the comments of code

Q1.

For this question since n was huge so we had to convert these functions into log and then compare and plot.

First i plotted both the stirling number and factorial then i plotted the difference between them.

Q2.

I simulated the dice experiment by using random.choices function from random library providing the given probability distribution as weights , all the exception checks are also done .

Q3.

To find points from the square randomly as supposed to do in the experiment i used random.uniform function from python's random library.

Q4.

A dictionary for pair of words is created which stores a list of occurring words after this pair , this list helps in calculating the next word after a pair is printed . the probability of next occurring word is calculate by number of times it occurs in the list of the pair of words before it ..