

Problems 4

Distribution of \underline{z} particles among \underline{n} boxes.

(1) Classical particles = distinguishable

Prob. of realization of configurations in which in the first box, there is z_1 particles; in the 2nd - z_2 ; etc.; ... z_n ,

$$\text{is } = \frac{z!}{z_1! z_2! \dots z_n!} n^{-z}$$

(2) Let particles be Bosons. ^(a) How many are there different configurations for \underline{z} bosons distributed over \underline{n} boxes?

(b) What is the probability of ~~realization~~ realization of a given configuration?

(3) Let particles be Fermions (without spin). Response the same questions (a) & (b) as in (2).