1. We call a partition \( \{P_1, \ldots, P_k\} \) of \([n]\) nice iff \((j + 1) \not\in P_i\) for every \(i \in [k]\) and \(j \in P_i\).

Prove that number of nice partitions is equal to \(B(n - 1)\).
2. How many different 6-digit numbers have sum of their digits at most 47?
3. How many ways to put n indistinguishable balls into k different boxes if we have to put at least $a_i$ balls into the box with number $i$. 
