1. Prove that in a hash table with load factor α in which collisions are resolved by chaining, a successful search takes time Θ(1 + α), on the average, under the assumption of simple uniform hashing.
2. Prove that given an open-addressed hash table with load factor α= n/m< 1, the expected number of probes in a successful search is at most 1/α \* ln(1/(1-α)).