1. Sequence-Based Dictionaries
Consider the implementation of a dictionary as an unordered sequence. Write a pseudo-code algorithm for finding an element with key $k$.

2. Collision Handling
Consider a hash table of size 11. Using the hash function $h(k) = (2k + 5) \mod 11$, show the result of inserting the keys 12, 44, 13, 88, 23, 94, 11, 39, 20, 16, 5. Assume that collisions are handled by:
   a) Separate chaining;
   b) Linear probing;
   c) Double hashing with $h'(k) = 7 - (k \mod 7)$.

3. Linear Probing and Rehashing
Consider a dictionary implementation based on hash tables, which handles collisions with linear probing.
   a) Write respective pseudo-code algorithms for inserting and removing elements, which use a special marker AVAILABLE to represent deleted elements. The algorithm for inserting an element should also include a solution for rehashing the array if it is full.
   b) Do the same, but without using a special marker.