CSE332 Week 5 Section Worksheet

1. For each of the following types of hash-tables, insert the following numbers into an initially empty table of size 10 (use h(k) = k%TableSize as the primary hash function):

23, 27, 94, 43, 14, 3

1. Separate Chaining (with each bucket being an unsorted linked list)
2. Linear probing
3. Quadratic probing
4. Double Hashing, with h2(k) = 7- (k%7) as the secondary hash function

When done, give the load factor for the resulting table.

1. In 1.d., what’s wrong with h2(k) = k%7 as a secondary hash function?
2. Imagine we have a hash table with a poorly chosen primary hash function (or we just get very unlucky with our insertions) and all the keys are mapped to the same index by our primary hash function. How would this affect a table using separate chaining? How would this affect a table using double hashing (assume that the secondary hash function distributes the keys fairly evenly)?