Theory 9b answers:

Question 1: n distinct recursive calls

Question 2: Dn^2 and n respectively

Question 3: Change the for loop to be “for (j=i; j <=i + W && j <= n; j++)”

Running time is O(D*n*W) now. Since we know the max length is W, we only need to search for things within W distance of the start of the substring

Question 4: We can reduce the time required by using a trie to store things instead of a dictionary. When we’re determining if a given substring is a valid word using a trie will allow us to stop early if it’s not a viable word. E.g. if we find that “aq” is not the start to any words in the trie, we can stop immediately. Overall this limits our search to W characters, and we do it n times, so the total runtime is O(n*W)