8.3)

a) Iterate through the length of each string X and Y to find common substrings. The first string (X) will have its character at index i compared to string Y to find a common suffix between i and j. A summation matrix for all values 1 to i and 1 to j is created and initialized to 0. If a match is found, then the value of the summation matrix (values which are iterated through) is incremented at the given index values (i and j). Therefore, the summation matrix(i,j) = summation matrix(i,j-1) + 1 if j is the one incremented, summation matrix(i,j) = summation matrix(i-1,j) + 1 if i is the one incremented, and summation matrix(i,j) = summation matrix(i-1,j-1) + 1 if both i and j are incremented

b) String X is used as the initial value and all of string Y is iterated through to find a matching character. If the characters match, the count for the length is incremented. If a substring with a greater length than the previous string is found, then that substring is saved and is the new maximum.

8.7)

a)Two 10s,

one 10 and ten 1s,

one10 one6 and four1s,

one6 fourteen1s,

two6 eight1s,

three6 two1s,

twenty1s

b) To compute C(n,k) make the different combinations for C where n is the value the combinations add to and k is the number of denominations used and the value is the total number of combinations. The formula for this is C(n,k) = C(n – dk, k) + C(n, k-1).