

Marinel Tinnirello

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CMPT 435 - Extra Assignment #1

1)

a) Base Cases:

If the index = the length of the array, return false

Else if the index of the array = x, return true

General Cases:

Loop through the list of sets

Create a new set

Loop through i to add to the list

Loop through the list of sets

Add the current index into the set

If getSum(set) equals x, return true

Add new element as itself into a list

Loop through to add a final set into sets

Return recursive call to subsetSum, with i + 1

b) if ( index == A.length ) { Output: return false } // 1

else if ( A[ index ] == x ) { Output: return true } // 1

else

for ( List<Integer> set : sets ) // n

for ( Integer i : set ) // n

s.add( i ) // 1

newSets.add( i ) // 1

for ( List<Integer> set : sets ) // n

set.add( A[ index ] ) // 1

if ( getSum( set ) == x ) { Output: return true } // n

set.add( A[ index ] ) // 1

sets.add( s ) // 1

for ( List<Integer> set : sets ) // n

newSets.add( set ) // n

return subsetSum( A, x, newSets, index + 1 ) // n

c)  $O(n) = 2^n$