TUTORIAT -8-
Prog. Dinamica

1. In cate moduri putem forma N dintr-o lista de posibile numere.

Ex: [1,2,3] n=4 => 4 (1 1 1 1, 1 1 2, 3 1, 2 2)

2. Cea mai lunga subsecventa comuna

Exemplu: X = AGGTAB
Y = GXTXAYB

R: 4

Let the input sequences be X[0..m-1] and Y[0..n-1] of

lengths m and n respectively.

And let L(X[0..m-1], Y[0..n-1]) be the length of LCS of the two sequences X and Y.

Following is the recursive definition of L(X[0..m-1], Y[0..n-1]).

If last characters of both sequences match (or X[m-1] == Y[n-1]) then
L(X[0..m-1], Y[0..n-1]) = 1 + L(X[0..m-2], Y[0..n-2])
If last characters of both sequences do not match (or X[m-1] != Y[n-1]) then
L(X[0..m-1], Y[0..n-1]) = MAX (L(X[0..m-2], Y[0..n-1]), L(X[0..m-1], Y[0..n-2]))

Examples:
1) Consider the input strings "AGGTAB" and "GXTXAYB". Last characters match for the strings. So length of LCS can be written as:
L("AGGTAB", "GXTXAYB") = 1 + L("AGGTA", "GXTXAY")

	A	G	G	T	A	B
G	-	-	4	-	-	-
X	-	-	-	-	-	-
T	-	-	-	3	-	-
X	-	-	-	-	-	-
A	-	-	-	-	2	-
Y	-	-	-	-	-	-
B	-	-	-	-	-	1

3. Problema rucsacului