## Longest Increasing Subsequence

$$LISbigger(i,j) = \begin{cases} 0 & \text{if } j > n \\ LISbigger(i, j+1) & \text{if } A[i] \geq A[j] \\ \max \begin{Bmatrix} LISbigger(i, j+1) \\ 1 + LISbigger(j, j+1) \end{Bmatrix} & \text{otherwise} \end{cases}$$

## Subset Sum

$$SS(i,t) = \begin{cases} \textsc{True} & \text{if } t = 0 \\ \textsc{False} & \text{if } i > n \\ SS(i+1,t) & \text{if } t < X[i] \\ SS(i+1,t) \ \vee \ SS(i+1, t - X[i]) & \text{otherwise} \end{cases}$$

## Longest Palindromic Subsequence

$$L(i,i) = 1$$

$$L(i,i+1) = 2 \text{ if } A[i] = A[i+1]$$

$$L(i,j) = \begin{cases} 2 + L(i+1, j-1) & \text{if } A[i] = A[j] \\ \max\Big(L(i+1,j), L(i,j-1)\Big) & \text{otherwise} \end{cases}$$