# Algorithms Homework 4

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## 1 Question 15.2-2

Give a recursive algorithm MATRIX-CHAIN-MULTIPLY($A$, $s$, $i$, $j$) that actually performs the optimal matrix-chain multiplication, given the sequence of matrices $\langle A_1, A_2, ..., A_n \rangle$, the $s$ table computed by MATRIX-CHAIN-ORDER, and the indices, $i$ and $j$. (The initial call would be MATRIX-CHAIN-MULTIPLY($A$, $s$, 1, $n$). ).

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## 2 Question 15.4-2

Give pseudocode to reconstruct an LCS from the completed $c$ table and the original sequences $X = \langle x_1, x_2, ..., x_m \rangle$ and $Y = \langle y_1, y_2, ..., y_n \rangle$ in $\mathcal{O}(m + n)$ time, without using the $b$ table.

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