Homework Assignment 4

This assignment is due by Tuesday March 13 (in class). Assignments should be handed in before the class begins.

**Problem 1:** Solve exercises 16.2-3 (page 427), 16.3-3, 16.3-5 (page 436), 23.1-2, 23.1-3 (page 629), 23.2-8 (page 637), 24.3-2, 24.3-10 (page 663), and 35.3-1 (page 1122) in the textbook.

**Problem 2:** Given two strings (sequences of letters) \( x = x_1x_2\ldots x_n \) and \( y = y_1y_2\ldots y_m \) we say that \( x \) is a subsequence of \( y \) if the letters in \( x \) appear in \( y \) in the same order, although not necessarily consecutively. For example \( abc \) is a subsequence of \( adbfcgef \) as well as of \( aabc \). But \( abc \) is not a subsequence of \( bbacdcba \).

Develop an \( O(n + m) \) (greedy) algorithm to decide whether \( x \) is a subsequence of \( y \). Prove your algorithm correctness and analyze its run time.

**Problem 3:** [extra credit; 20 points] Solve exercise 35.3-3 (page 1122) in the textbook.