Assignment #5: 
Due July 12

1. Exercise 15.2-1 (page 378)

2. Given an unsorted array $A[1, 2, ..., 2n]$ of numbers containing an even number of elements, and two players who take turns alternately at selecting one of the numbers at either end of the array (of remaining elements). Each wants to maximize the total of the numbers selected by them minus that of the other player. Show how to use dynamic programming to obtain their best strategies.

3. Consider the activity selection problem discussed before but with profits. Activity $i$ ($= 1, 2, ..., n$) has three values associated with it. $s_i$ the start time, $f_i$ the finish time and $p_i$ the profit. We want to select a subset of nonoverlapping activities whose total profit is maximum. Show how to use dynamic programming to solve this problem.

4. Given a string $A[1, 2, ..., n]$ of numbers, find a subsequence $B[1, 2, ..., m]$ with $B[i] < B[i + 1]$ for $i = 1, 2, ..., m - 1$ such that the value of $m$ is maximum.

5. Problem 15-6 (page 408)

6. 16.2-2 (page 427)