Math/CS 395 - Analysis of Algorithms - Spring 2012

Homework 5

Assigned: Friday, February 17, 2012

Due: **Wednesday, February 29, 2012**

1. What does FIND-MAXIMUM-SUBARRAY return when all elements of A are negative?

2. Write pseudocode for the brute-force method of solving the maximum-subarray problem. Your procedure should run in $\Theta(n^2)$ time (show that).

3. Implement both the brute-force and recursive algorithms for the maximum subarray problem on your own computer. You may use any programming language including Matlab. What problem size n_0 gives the crossover point at which the recursive algorithm beats the brute-force algorithm? Then change the base case of the recursive algorithm to use the brute-force algorithm whenever the problem size is less than n_0. Does that change the crossover point?