Computer Science 501
Data Structures & Algorithms
The College of Saint Rose
Fall 2013

Lab 4: More Analysis
Due: 6:00 PM, Wednesday, October 2, 2013

This "mini" lab, which is again part problem set than a lab, will give you a chance to practice with more of the analysis tools we have considered in class. You may again discuss the lab with your classmates and give and receive some help, but your submission **must be your own work**.

Written Problems

1. Consider the following recursive algorithm:

```
int mystery(int A[0..n-1])
  if (n==1) return A[0]
  else
    temp = mystery(A[0..n-2])
    if (temp <= A[n-1]) return temp
    else return A[n-1]
```

   a. What does this algorithm compute? (3 points)

   b. Set up and solve a recurrence relation for the algorithm's basic operation count. (7 points)

2. Consider the following recursive algorithm:

```
int S(n)
  if (n==1) return 1
  else return S(n-1) + n*n*n
```

   Set up and solve a recurrence relation for the algorithm's basic operation count. (5 points)

Submission

Before 6:00 PM, Wednesday, October 2, 2013, submit a PDF of your responses for grading using Submission Box at `http://sb.teresco.org` under assignment "Analysis2".