University of Nevada, Las Vegas Computer Science 302 Spring 2016

Assignment 2, Problem 1: Due 11:30 AM, February 3, 2016

Name:_____

You are permitted to work in groups, get help from others, read books, and use the internet. But the handwriting on this document must be your own. You may attach extra sheets, using a stapler.

1. Find the asymptotic time complexity of each of the following code fragments. Each answer is one of the following: n, $\log\log n$, $\log n$, $\log^2 n$, $\sqrt{n}$, $n \log n$, $n^{\frac{3}{2}}$. Do not turn in any code for this problem.

   (a)
   ```
   for (i = n; i > 1; i = i/2)
   ```

   (b)
   ```
   for (i = 1; i < n; i++)
     for (j = 1; j < i; j = 2*j)
   ```

   (c)
   ```
   for (i = 1; i*i < n; i++)
   ```

   (d)
   ```
   for (i = 2; i < n; i = i*i)
   ```

   (e)
   ```
   for (i = 1; i < n; i = 2*i)
     for (j = 1; j < i; j = 2*j)
   ```

   (f)
   ```
   for (i = 0; i < n; i++)
     for (j = 0; j < i*i; j++)
   ```

   (g)
   ```
   for (i = 1; i < n; i++)
     for (j = i; j < n; j = 2*j)
   ```