MA/CSSE 473 – Design and Analysis of Algorithms **In-class Quiz Day 06**

Name:_____ Score:____/ 9 circle your Section # 01(3rd) 02 (4th)

1. If c is a positive constant, find a simple big-Theta expression (as a function of n) for the following sum

   when $0 < c < 1$

   when $c = 1$

   when $c > 1$

2. Which is harder (computationally): factoring numbers or determining whether numbers are prime?

3. Trace the integer division algorithm from class for `divide(19, 4)`.

4. When exponentiating n-bit numbers $x^y \pmod N$, where N is also n-bit, how many recursive calls are needed?

5. Each call is $\Theta(\quad)$

6. Entire exponentiation algorithm is $\Theta(\quad)$

7. Prove that there is always a survivor in an odd pie fight.

8. Tell me about anything from today's lecture that you found confusing or feel that we need to spend more time on. Be as specific as you can, (or write N/A).

9. What questions do you have (from today's lecture, from the reading, or from the course in general)? Or write N/A.