

ICS 353–Design and Analysis of Algorithms, Winter 2008**Quiz: 3****Section: 1****Time: 10 minutes**

Name:

ID#:

Question 1: [4 marks]

How many comparisons are performed by the bottom-up MergeSort Algorithm on the array $A = [1, 2, 3, \dots, 8]$.

How many assignments are performed?

Question 2: [6 marks]

1. Prove that $\log n! = O(n \log n)$.

2. Order the following functions by using the \prec relation.

$$3^n, \sqrt{n} \log n^2, n!, n^2 + 5n, \log \log 2^n$$