# Kimberly Mackey

# Algorithm Analysis Questions

Each question is worth 2 points each for a total of 10.

1. What is the difference between the growth function of an algorithm and the order of that algorithm?

The growth function is a function express time or space utilization comparable to the problem size. Whereas the order of the algorithm is a limit on a growth function, defined by the growth function's dominant term.

1. Why does speeding up the CPU not necessarily speed up the process by the same amount?

Linear speedup takes place soly if the algorithm has constant order or linear order. As the problem of the algorithm grows, faster processors have reduced impact.

1. How do we use the growth function of an algorithm to determine its order?

To determine the algorithms order we must determine how often a particular statement(s) gets executed. So the complexity is sustained by analyzing the execution of loops.

1. How do we determine the time complexity (growth function then order) of a loop?

In order to find the time complexity of a loop you multiply the complexity of the body of the loop by how many times the loop will execute.

1. How do we determine the time complexity (growth function then order) of a function call?

First you have to determine the order of the method. We have to multiply the complexity of the method, which is the body of the loop by the number of times the loop will execute.