Problem Set 1

1.

Suppose it is known that the running time of an algorithm is always about N^2 and the running time of another algorithm is always about N^3. What does this say about the relative performance of the algorithms? Suppose instead that the running time of the first is $O(N^2)$ and the running time of the second is $O(N^3)$. What does *this* say about the relative performance of the algorithms?

2.

Which of the following programs (from the book) are stable sorts? *selection*, *insertion*, *shellsort*, *bubblesort*, *quicksort*?

3.

List the following programs in order of their likely running time on a file of N equal keys, for large N: *quicksort*, *insertion*, *selection*.

Extra Credit.

Include *shellsort* in the list for the third question above.

Due at precept on Feb.14/15