CS583 Spring 2009
Quiz 02 Feb.04.09 Name: _____ .

Show all work clearly and in order. Justify your answers whenever possible; You have 20 minutes to take this 10 point quiz.

1. (*3 points*) Consider the following array $A = [14, 3, 21, 5, , 6, 5, 9, 1]$.

- Build a max-heap from A. Show steps to earn full points.
- Exact the max value from the heap. Show steps to earn full points.

2. (*3 points*) Quick sort the following array $A = [14, 3, 21, 5, , 6, 5, 9, 1]$. Show steps using the **first** elements as the pivots.

3. (*3 points*) Assuming that we know the values in A are in the range of 5 and 15. Use counting sort to sort the following array $A = [7, 9, 11, 5, , 6, 5, 9, 1, 12]$. Show steps to earn full points.

4. (*1 point*) In Chapter 9, we discuss methods, called "Select", to find the k-th smallest value in linear time. Another way of finding the k-th smallest value is by sorting. Provide a case that finding by sorting will be more efficient than the "Select" method.