CSE 12 spring 2014 Week 7 Review Quiz

Use self-paced polling to answer these questions with your clicker. In addition, circle your answers on this form and turn it in as a record of your answers in case there are any disputes about your answers.

1. Which of these is the worst choice of pivot for quicksort?
   A. The smallest element in the list
   B. The first element in the list
   C. A random element in the list
   D. A and B are about the same, and worse than C
   E. A, B, and C are all about equal

2. Consider the following list
   
   35  25  19  44  40  6  12  15
   
   If you select 35 as the pivot, which of the following is a possible ordering of the list elements after the partition step?
   A. 6  25  19  15  12  35  40  44
   B. 35  6  25  19  15  12  40  44
   C. 19  25  35  44  6  12  15  40
   D. 25  35  19  44  40  6  12  15
   E. 6  25  19  44  40  35  12  15

3. Which of the following statements compile(s) without errors?
   i. LinkedList<List> myL = new LinkedList<ArrayList>();
   ii. LinkedList<? extends List> myL = new LinkedList<ArrayList>();
   iii. LinkedList<? super List> myL = new LinkedList<List>();
   A. i only
   B. ii only
   C. i and ii
   D. i and iii
   E. ii and iii

4. Is this a valid min-heap?
   A. Yes
   B. No, because it violates the structure property of heaps
   C. No, because it violates the order property of heaps
   D. No because it violates both the structure and the order property of heaps

TURN OVER
5. When you remove an element from an array-backed heap, at what index is the element to remove located? Assume the variable size stores the number of elements currently in the heap, and arr.length is the length of the array storing the heap.
   A. 0
   B. 1
   C. size – 1
   D. arr.length – 1
   E. You can’t tell with the information given

6. Consider a node at position index in an array-backed heap. At what position in the array would you find that node’s left child, if it exists?
   A. index * 2
   B. (index+1) * 2
   C. index*2 + 1
   D. index/2
   E. You can’t tell with the information provided