COE 428 Quiz 6

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1. The **worst-case** runtime complexity of the insertion into a binary heap with N elements is
   a. O(N^2)
   b. O(N log N)
   c. O(N)
   d. O(log N)

2. Given two max heaps of size n each, what is the minimum possible time complexity to make a one max-heap of size from elements of two heaps?
   a. O(nLogn)
   b. O(nLogn)
   c. O(n)
   d. O(nLogLogn)

3. Which of the following statement is wrong?
   a. A heap can have more than one node with one child.
   b. The value in the root node of a heap is the largest.
   c. Every node in a heap can have at most two children
   d. If a node has only one child, then the child is the left child node.

4. Suppose a value 35 is inserted into a max heap represented by the array: 40, 30, 10 , 15, 16, 17 ,8 ,4. After insertion, the new heap is:
   a. 40,30,20,10,15,16,17,8,4,35
   b. 40,35,20,10,30,16,17,8,4,15
   c. 40,30,20,10,35,16,17,8,4,30
   d. 40,35,20,10,15,16,17,8,4,30

5. Select the true statement about the worst-case time for operation on heaps.
   a. Neither insertion nor removal is better than linear.
   b. Insertion is better than linear, but removal is not.
   c. Removal is better than linear, but insertion is not.
   d. Both insertion and removal are better than linear.