1. Draw the (improper) binary tree whose inorder traversal is abcdefgh and whose postorder traversal is acbegfhd.

2. A skew tree is a tree where each node except one has exactly one child. When added to a binary search tree, how many permutations of 1, 2, . . . , n yield a skew tree? (Since any one skew tree is generated by just one permutation, this question is asking for the number of skew trees of n nodes.) Explain your formula.

3. C-2.12

4. Show the contents of an array A[0..6] implementing a binary min-heap. Repeatedly insert the following values into an initially empty heap: 7, 6, 5, 4, 3, 2, 1. Use the up-heap bubbling insertion of the items one-by-one.

5. Show the contents of the array A[0..6] as a binary min-heap, initially with entries A[i]=7-i, as it changes during the linear time bottom-up heap construction.

6. C-2.32

7. Given k sorted lists containing a total of n elements, describe how to merge them into a single sorted list in time O(n log k). (Hint: use a heap.)