Problem of the Day

Problem: You are given the task of reading n numbers and then printing them out in sorted order. Suppose you have access to a balanced dictionary data structure, which supports the operations search, insert, delete, minimum, maximum, successor, and predecessor each in $O(\log n)$ time.

1. How can you sort in $O(n \log n)$ time using only insert and in-order traversal?
2. How can you sort in $O(n \log n)$ time using only minimum, successor, and insert?
3. How can you sort in $O(n \log n)$ time using only minimum, insert, delete, search?