A Heap(ing) Portion

1. Insert the items into a heap (that is initially empty) in the order given below:
   
   12, 6, 20, 11, 7, 9, 15, 10, 3
   
   Draw the heap after each insertion. Give a vector representation of the heap after the last item has been inserted.

2. Consider the heap given below.

First perform two DELETEMIN operations on this heap. Then insert the element 14 into the heap. Finally perform one more DELETEMIN operation. As above, draw the heap after each step and give the final vector representation after all the operations have been performed.