Guidelines: You may brainstorm with others, but please write up the answers by yourself. Acknowledge all collaborations and external resources used.

1. CLRS Problem 6-1
2. CLRS 20.2-1
3. CLRS 20.4-1

4. Suppose we performed decrease-key in a Fibonacci heap using sift-up instead of making cuts. For a Fibonacci heap with a tree of depth $d$, describe a worst-case sequence of $j$ decrease-key operations and show that its complexity is $\Theta(jd)$. (From the previous question, we know that in the worst-case $d = n$ for an $n$-node heap.)

5. (Grads only) CLRS 20.4-2