

Homework: Amortized Analysis and Fibonacci Heaps**Problems**

1. (25 pts) Exercise 17.3-3. (Hint: a reasonable potential function to use is $\Phi(D_i) = kn_i \cdot \ln n_i$ where n_i is the number of elements in the binary heap, and k is a big enough constant. You can use this function and just show the change in potential for each of the two operations.)
2. (25 pts) Exercise 17.3-6.
3. (25 pts) Exercise 19.2-1
4. (50EC pts). Figure out what are the marked nodes on Fibonacci Heaps. In particular explain how the potential function works for FIB-HEAP-EXTRACT-MEAN and FIB-HEAP-DECREASE-KEY operations.