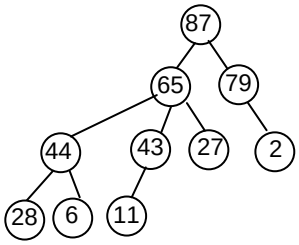
Homework Set #4

1. (10 points) Exercise 5.2-4 (page 122)
2. (10 points) Problem 6.1-1 (page 129)
3. (10 points) Problem 6.1-2 (page 129)
4. (10 points) Problem 6.4-1 (page 160)
5. (30 points) Problem 6-2 (page 167)
6. (10 points) Does the tree on the right represent a MAX HEAP? Why or why not?



4. (20 points) Given the array **A** = < 22, 98, 17, 6, 34 >

(a) Illustrate the operation of **HeapSort** using Figure 6.4 on p. 161 as a model**.** Sort the numbers into non-decreasing order.

(b) A swap is an exchange of two elements in the array: $A[i] \leftrightarrow A[j]$**.**

How many swaps are performed by **HeapSort** to sort the array **A**? Note: Include the swaps used to build the heap.