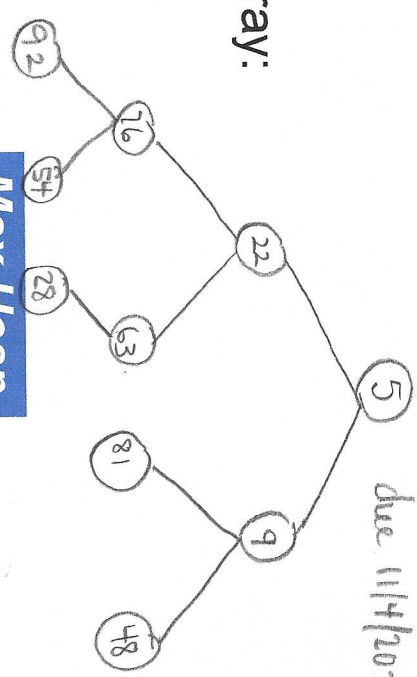


due 11/4/2020

Simulate the heapsort algorithm manually to sort the array:

Show all steps

1. Make into a heap
2. Sort



Max-Heap

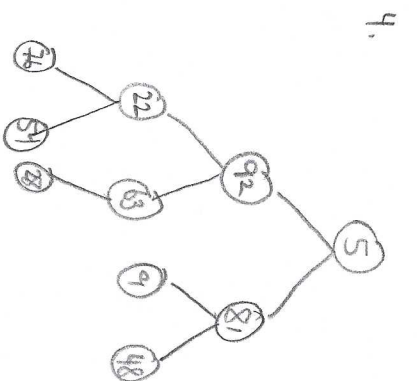
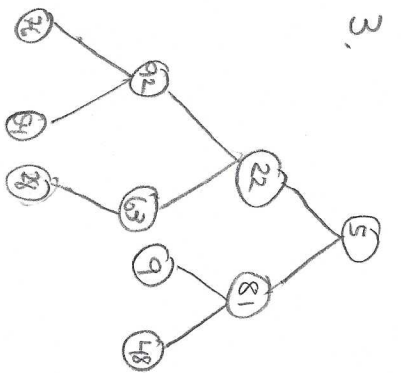
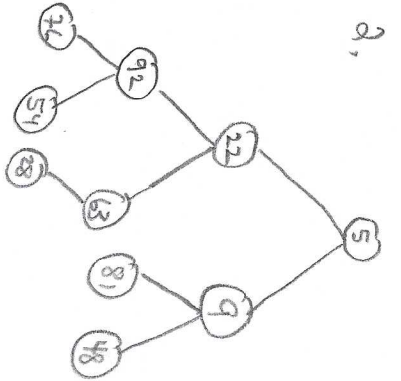
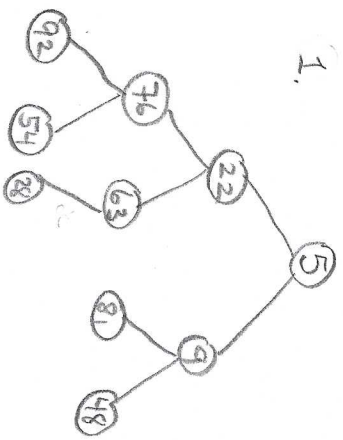
| | | | | | | | | | | |
|-----|----|----|----|----|----|----|----|----|--|--|
| [0] | 5 | 5 | 5 | 5 | 92 | 92 | 92 | | | |
| [1] | 22 | 22 | 22 | 92 | 5 | 76 | 76 | | | |
| [2] | 9 | 9 | 81 | 81 | 81 | 81 | 81 | | | |
| [3] | 76 | 92 | 92 | 22 | 76 | 76 | 5 | 54 | | |
| [4] | 63 | 63 | 63 | 63 | 63 | 63 | 63 | | | |
| [5] | 81 | 81 | 9 | 9 | 9 | 9 | 9 | | | |
| [6] | 48 | 48 | 48 | 48 | 48 | 48 | 48 | | | |
| [7] | 92 | 76 | 76 | 76 | 22 | 22 | 22 | | | |
| [8] | 54 | 54 | 54 | 54 | 54 | 54 | 5 | | | |
| [9] | 28 | 28 | 28 | 28 | 28 | 28 | 28 | | | |

Lab 7: HeapSort

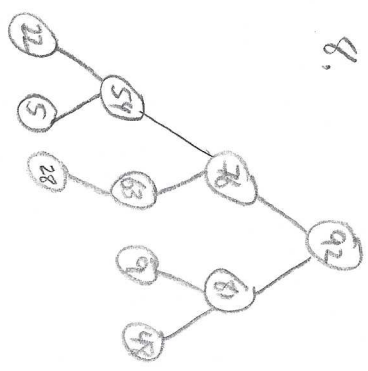
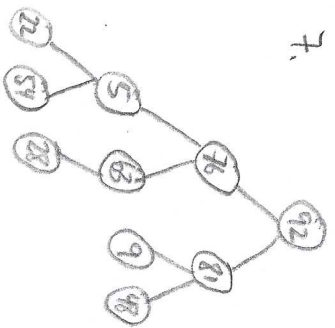
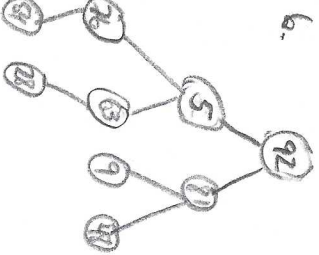
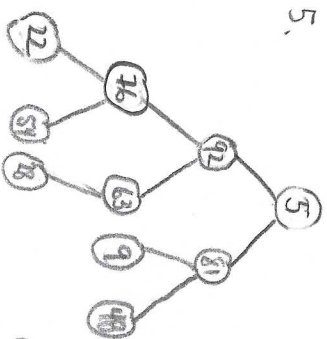
Susan Searles
CMSC 204, Prof. Alexander
October 28, 2020

Sorting

| | Pass 5 | Pass 6 | Pass 7 | Pass 8 | sorted | | |
|-----|--------|--------|--------|--------|--------|----|--|
| [0] | 9 | 48 | 5 | 28 | 28 | 5 | |
| [1] | 28 | 28 | 28 | 5 | 22 | 28 | |
| [2] | 48 | 9 | 9 | 9 | 9 | 22 | |
| [3] | 22 | 22 | 22 | 22 | 28 | 28 | |
| [4] | 5 | 5 | 48 | 48 | 48 | 48 | |
| [5] | 54 | 54 | 54 | 54 | 54 | 54 | |
| [6] | 63 | 63 | 63 | 63 | 63 | 63 | |
| [7] | 76 | 76 | 76 | 76 | 76 | 76 | |
| [8] | 81 | 81 | 81 | 81 | 81 | 81 | |
| [9] | 92 | 92 | 92 | 92 | 92 | 92 | |



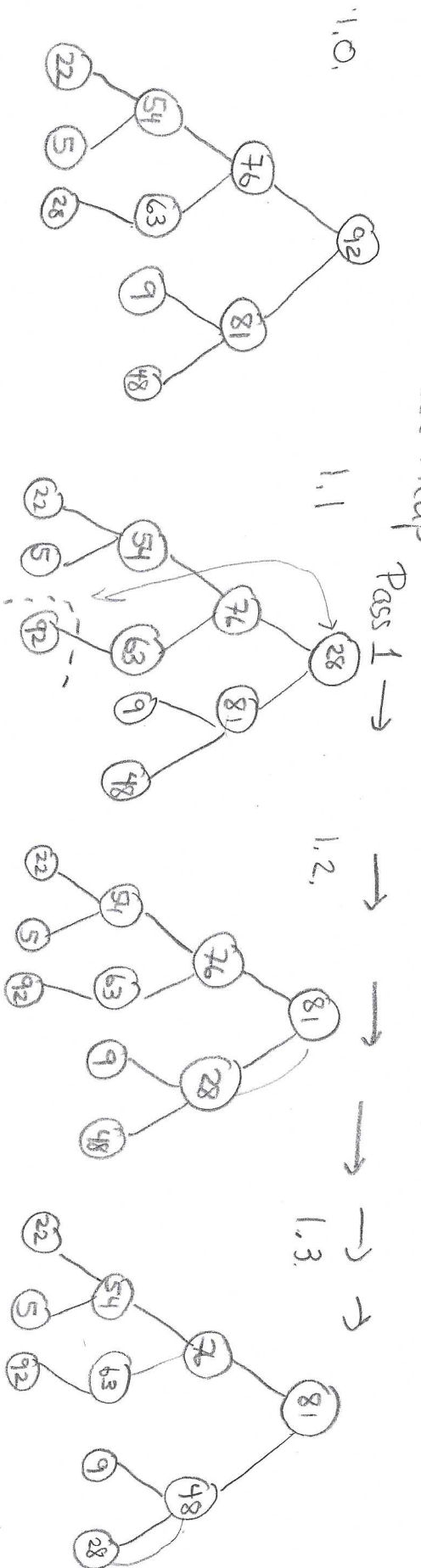
follow it
down the line?



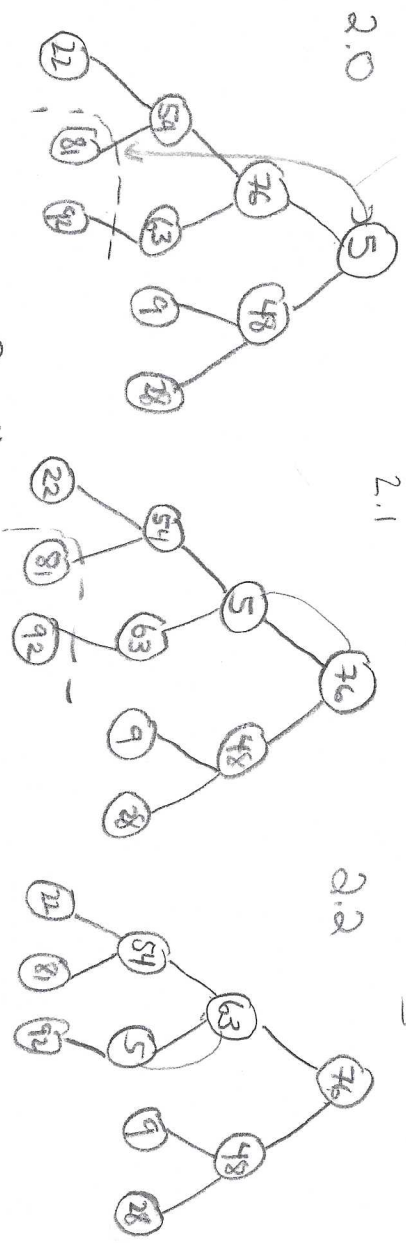
make into a max heap.

re-heap downwards

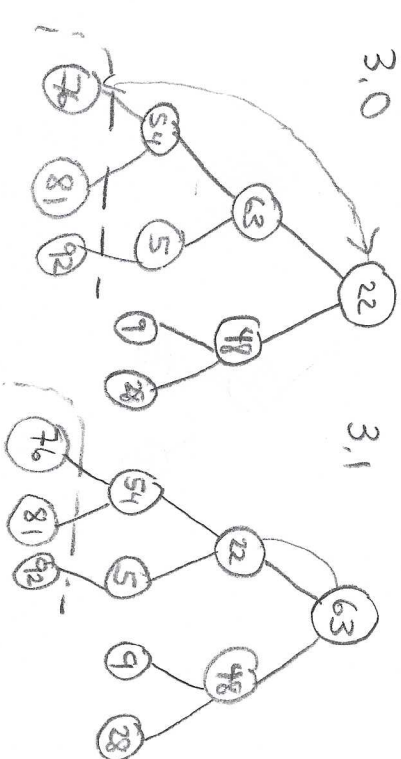
Sort the max heap



Pass 2

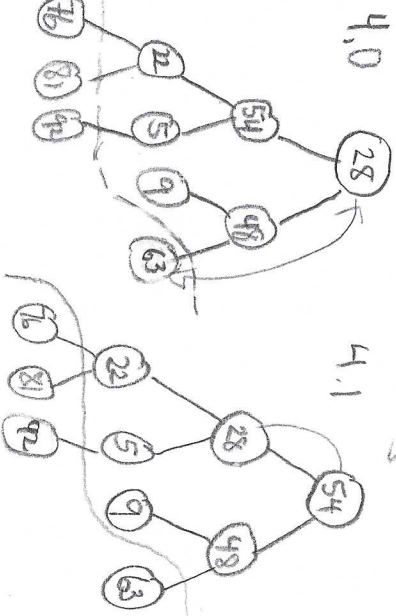


Pass 3

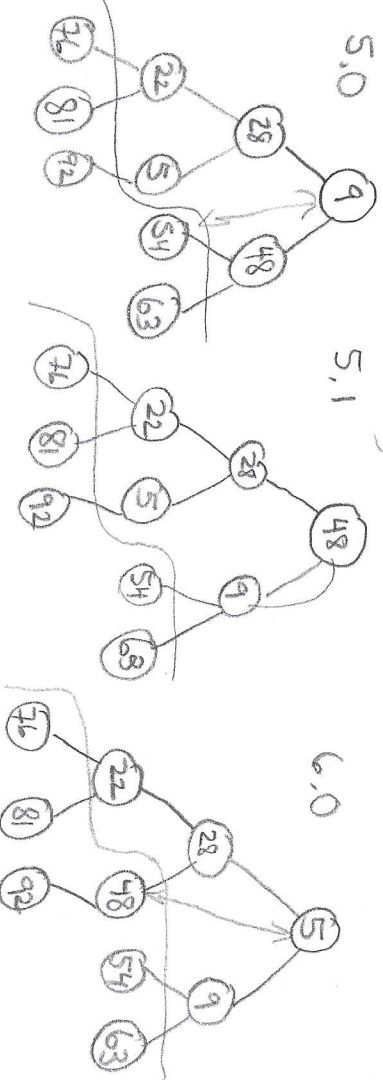


3.2. 

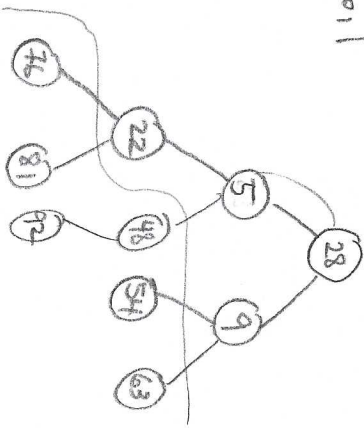
Pass 4



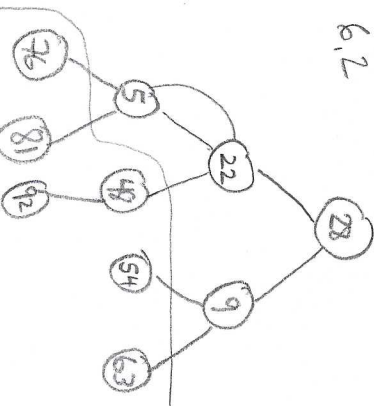
Pass 5



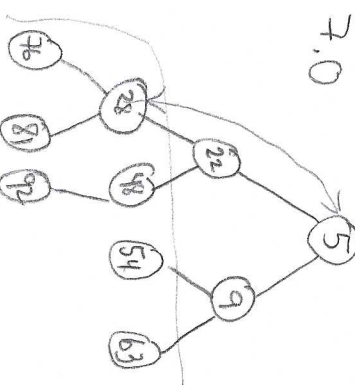
Pass 6 \rightarrow
6,1



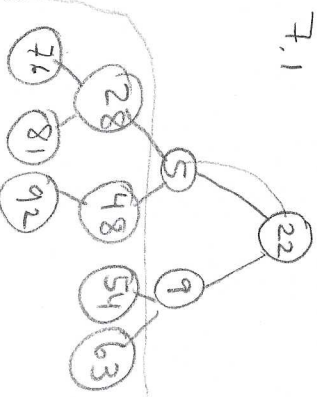
6,2



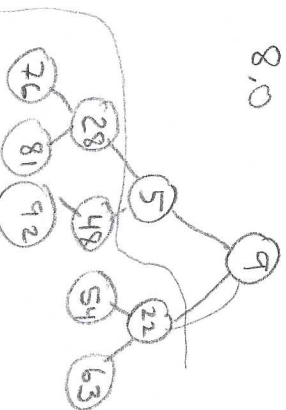
Pass 7 \rightarrow
7,0



7,1



Pass 8 \rightarrow
8,0



8,1

