Midterm exam: Tuesday, October 30. Closed notes. No calculators. Covering topics up to (inclusively) quicksort.

1. Show the result of the array (7, 2, 6, 3, 1, 12, 9, 5, 10, 4, 8, 11) converted into a max-heap.

2. Write pseudocode for the procedure Insert(S, x), which inserts an element x into a priority queue S.

3. Show how to implement a stack with a priority queue.

4. Draw the decision tree for quicksort operating on three elements. (Use the Lumoto Partition as given in the handouts.)