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 `Extract-Max(S)` that removes and returns the element in $S$ with the largest key.

3. Explain 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.)