1. Instead of binary heaps, suppose you had to implement ternary heaps (i.e., where each node has up to three children). Explain how you would implement such heaps using arrays, and how you can determine child and parent pointers. What are the advantages/disadvantages of ternary heaps over binary heaps?

2. Modify the Max-heapify algorithm to build ternary heaps.

3. Develop an algorithm that computes the kth-largest element in a set of n distinct integers in $O(n + k \log n)$ time.

4. Given a max-heap and a number $k$, design a $O(k \log k)$ algorithm that outputs the kth-largest element from the heap.