Problem 1

Sort the array A = [19, 2, 11, 14, 7, 17, 4, 3, 5, 15] using heap sort.

1. After initial heapify:

[19, 15, 17, 14, 7, 11, 4, 3, 5, 2]

2. After each call to MaxHeapify:

Iteration	Resulting array
1	[17, 15, 11, 14, 7, 2, 4, 3, 5, 19]
2	[15, 14, 11, 5, 7, 2, 4, 3, 17, 19]
3	[14, 7, 11, 5, 3, 2, 4, 15, 17, 19]
4	[11, 7, 4, 5, 3, 2, 14, 15, 17, 19]
5	[7, 5, 4, 2, 3, 11, 14, 15, 17, 19]
6	[5, 3, 4, 2, 7, 11, 14, 15, 17, 19]
7	[4, 3, 2, 5, 7, 11, 14, 15, 17, 19]
8	[3, 2, 4, 5, 7, 11, 14, 15, 17, 19]
9	[2, 3, 4, 5, 7, 11, 14, 15, 17, 19]