

1 [3]

3

2 [2, 9]

3
9

3 [3, 9, 7]

3
9 7

4 [3, 8, 7, 9]

3
8 7
9

5 [2, 3, 7, 9, 8]

2
3 7
9 8

6

6 [2, 3, 5, 9, 8, 7]

2
3 5
9 8 7

7 [1, 3, 2, 9, 8, 7, 5]

1
3 2
9 8 7 5

Delete min:

1
2
3 5
9 8 7

[2, 3, 5, 9, 8, 7]

2
8

1
2
3 5
9 8 7

[2, 3, 5, 9, 8, 7]

2
7
9 8

[3, 7, 5, 9, 8]

3
8
9

2

5
7 8

[5, 7, 8, 9]

b) Max Heap: [9, 8, 7, 3, 1, 2, 5]

Delete Max: [8, 5, 7, 3, 1, 2, 9]

2 [7, 5, 2, 3, 1, 8, 9]

2 [5, 3, 2, 1, 7, 8, 9]

4 [3, 1, 2, 5, 7, 8, 9]

5 [2, 1, 3, 5, 7, 8, 9]

6 [1, 2, 3, 5, 7, 8, 9]

Problem 2:

1 $O(N)$

2 $O(N^2)$

3 $O(N^4)$

4 $O(2^N)$