CSC 212 Tutorial #13
Heap

Problem 1

1. Construct a new binary min-heap from the following elements: 12, 5, 17, 22, 20, 9, 1, 32, 50, 16, 25, 8, 44 and 33 using the top-down approach

2. Perform three *RemoveRoot* operations on the heap you built in 1

3. Apply *HeapSort* on the heap you built in 1

Problem 2

Construct a max-heap from the following array using the bottom-up approach

0	1	2	3	4	5	6	7	8
-	1	20	9	24	9	15	10	54

Problem 3

What is the complexity of building a binary heap from a sequence of elements when all elements are:

- Sorted according to the heap property

- Sorted in the inverse of the heap property

Problem 4

Write the method *isMaxBinaryHeap(int[] elements, int size)* that returns true if and only if the array *elements* satisfies the max-heap condition.