Homework #4 - METCS566

I. For heapsort, what are the best and the worst initial arrangements of the elements to be sorted, as far as the execution time of the algorithm is concerned? Justify your answer.

II. Simulate a heapsort on the following array of 8 elements: 6, 42, 12, 55, 94, 18, 44, 67

III. Sketch an essentially complete binary tree with 16 nodes

IV. In my notes I presented an algorithm for making a heap (slow-make-heap) that is described as "rather inefficient". Analyze the worst case for this algorithm, and compare it to the linear-time algorithm make-heap.