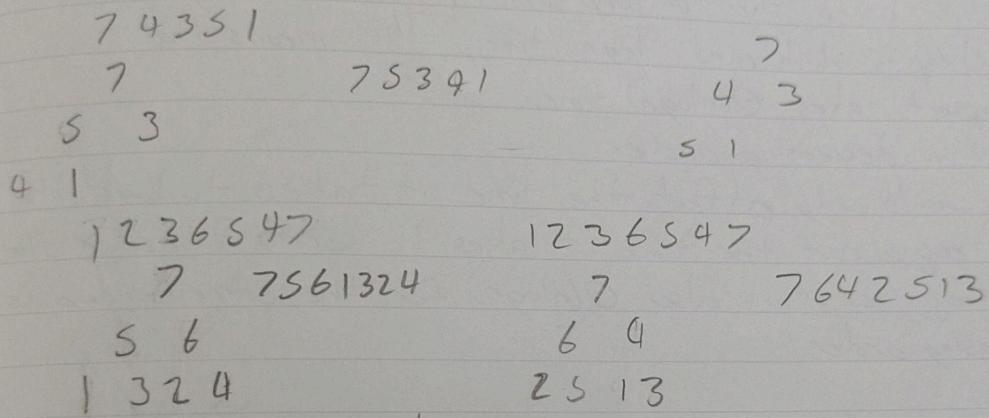


1) Build Max Heap (A)

A.heapSize = 1

for i=2 to A.length

Max Heap Insert (A, A[i])



a) They do not result in the same heap

The array [1236547] results in [7561324] done this way, & [7642513] done the way in the textbook

b) The new Build Max Heap requires $\Theta(n \log n)$ time for it. worst case because the for loop runs n times & Max Heap Insert takes $\log n$ times because it can be called once for each level of the tree if the inserted node is larger than all other nodes in the tree. This means that a $\log n$ function is called n times, or $\Theta(n \log n)$ if the initial array is already sorted in increasing order