

# Review 5

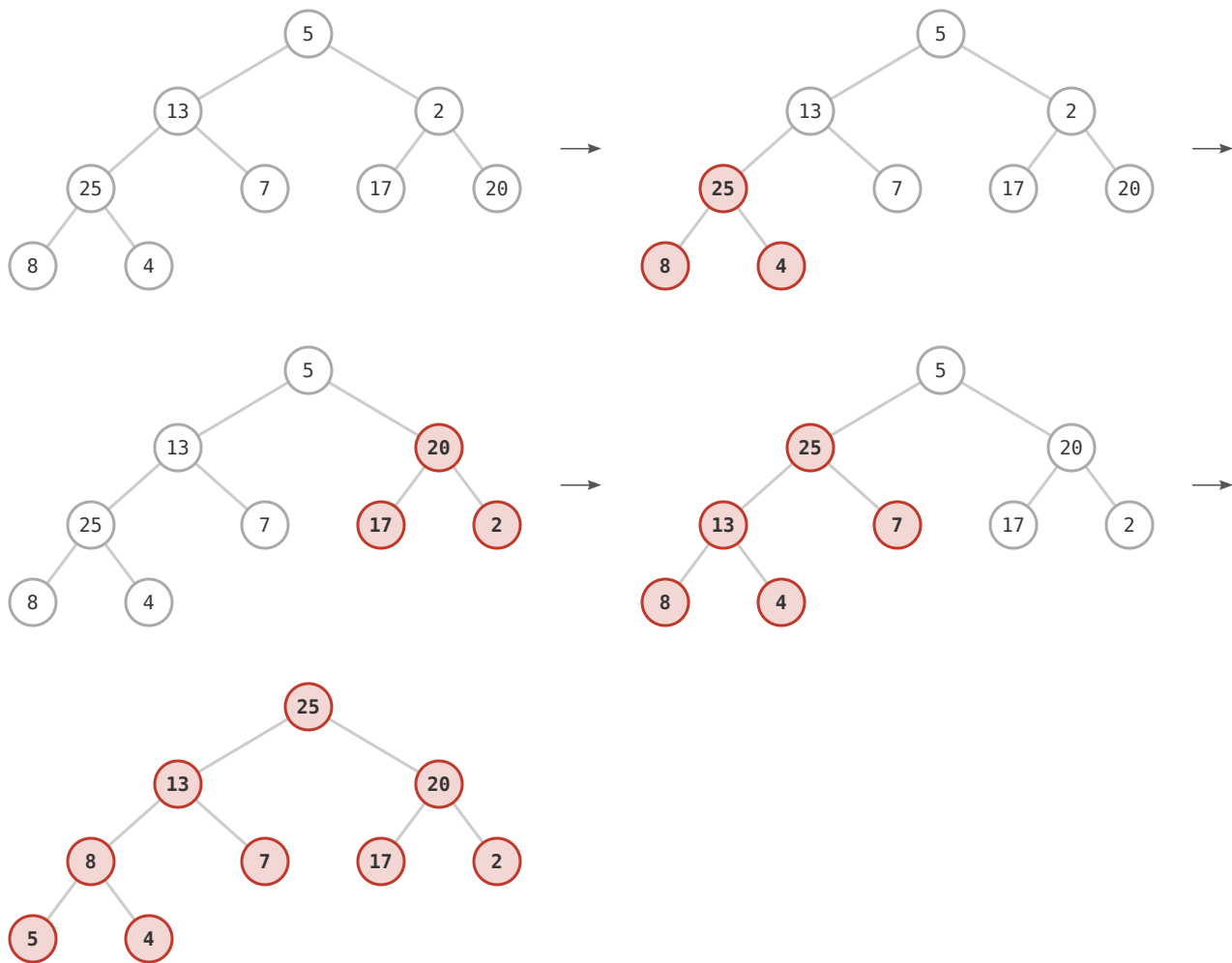
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## Problem 1

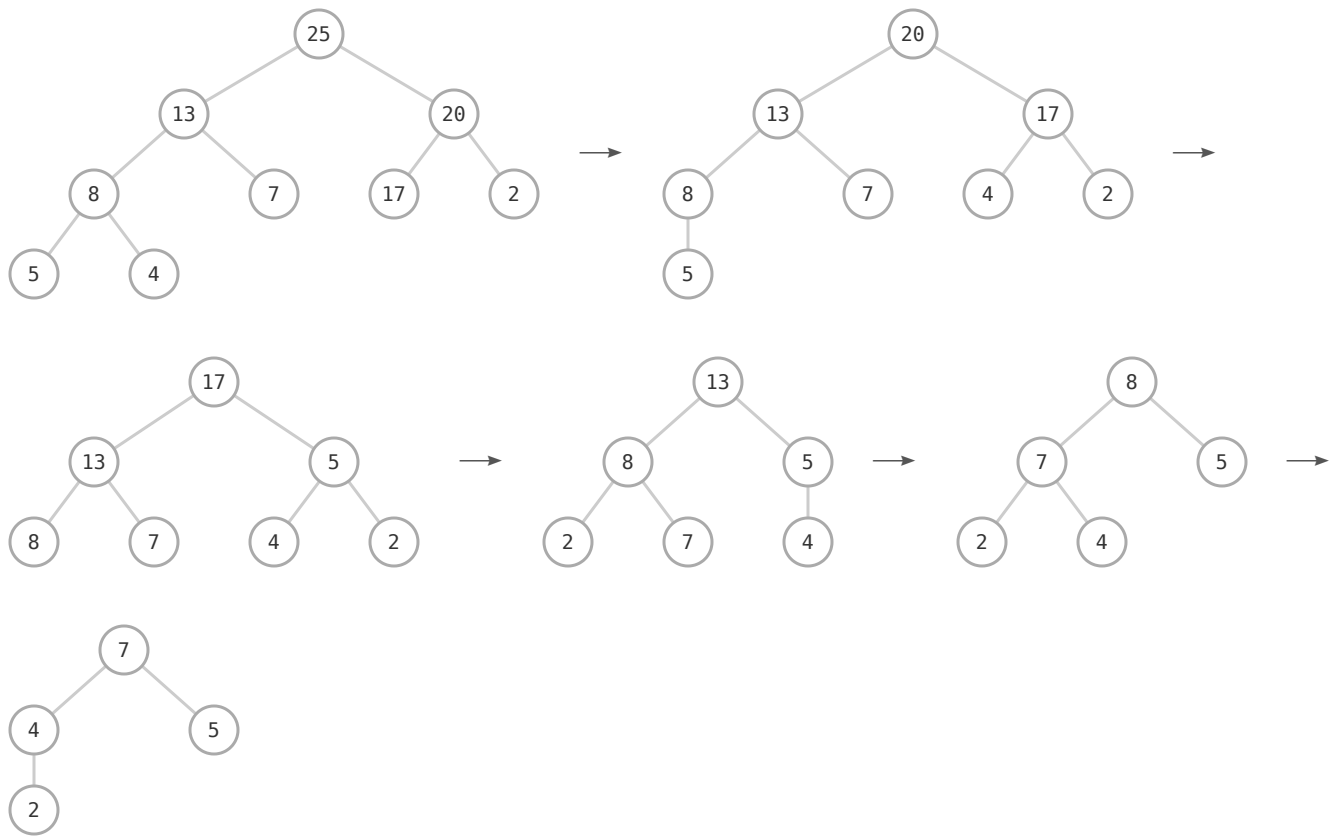
Illustrate the operation of **HEAPSORT** on the array  $A = \{5, 13, 2, 25, 7, 17, 20, 8, 4\}$

### Solution 1

- BUILD-MAX-HEAP

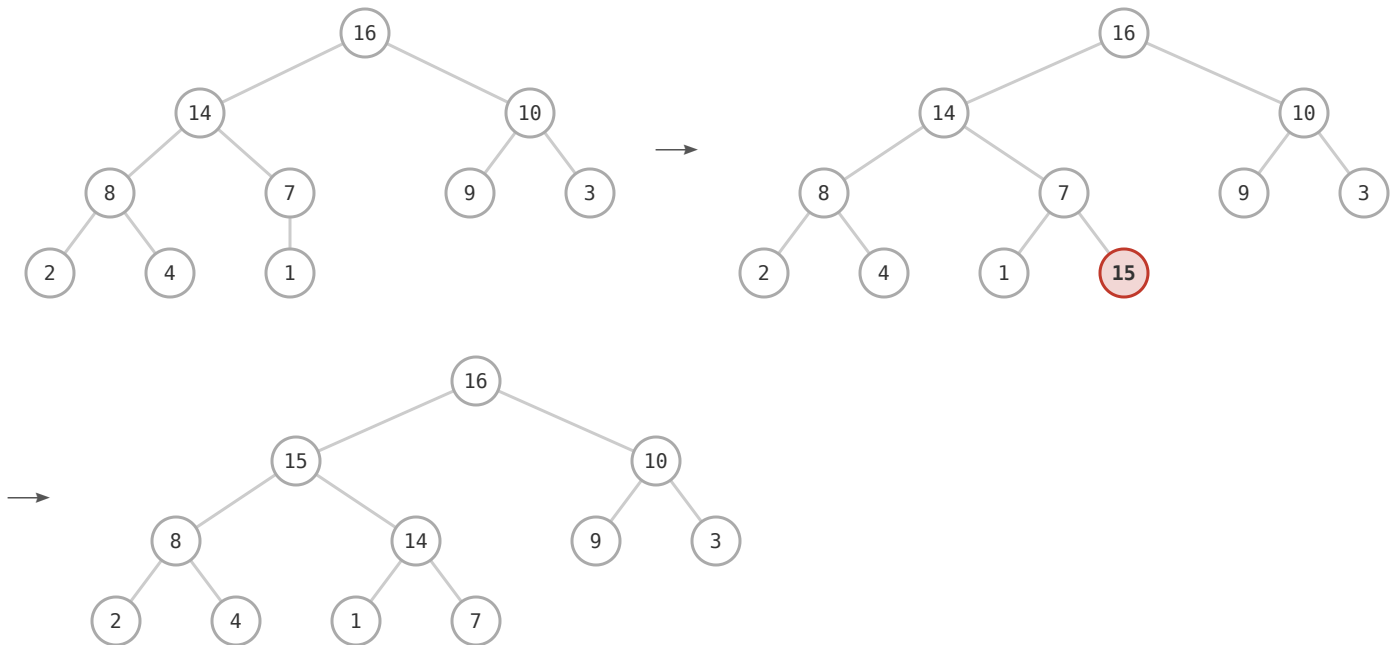


- EXTRACT-MAX



out 25 -> out 20 -> out 17 -> out 13 -> out 8

- MAX-HEAP-INSERT(A, 15)



## Problem 2

Fill in the blanks in the following pseudocode for Heapsort.

## Solution 2

```
1  HEAPSORT(A)
2      BUILD-MAX-HEAP
3      for i = A.length downto 2
4          exchange A[1] with A[i]
5          A.heap-size = A.heap-size - 1
6          MAX-HEAPIFY(A, 1)
```