## Universität Erlangen-Nürnberg Department of Computer Science 7 Dr.-Ing. U. Klehmet Introduction to Data Structures and Algorithms

Exercise sheet 6

## Exercise 12:

- a) Where in a max-heap might the smallest element reside, assuming that all elements are distinct ?
- b) Consider an array sorted in descending order. Is this a min-heap or a max-heap? Prove your claim!

## Exercise 13:

Illustrate the operation of procedure *Build-Max-Heap* on the array  $A = \langle 5,3,17,10,84,19,6,22,9 \rangle$ .

## Exercise 15:

How many elements has a queue Q, which is stored in an array of length n and where head(Q) = p and tail(Q) = q? Write pseudocode for a function NumElemQ(Q), which returns the number of elements.