

Assignment 2

Design & Analysis of Algorithms (4071) Spring 2018

Due Monday, February 19 at the beginning of the class

*ONE submission from each group is due at the beginning of the class on the due date, including a **cover sheet** with **the group number and a list of group members**. The cover sheet and the sheets with the solutions must be **stapled** together with the questions **in order**. Keep a copy for your record.*

Design and Complexity Analysis

1. [15pts] Page 71, Exercise 2.24

Asymptotic Notation, Comparing Orders and Order Formula

2. [20pts] Page 127, Exercise 3.6
3. [10pts] Page 130, Exercise 3.26

Recurrence Relations for Complexity Analysis

4. Page 131-132, Exercise 3.37 a) [10pts], b) [10pts], c) [5pts]
5. [10pts] Consider the sorting algorithm Insertion Sort for sorting a list $L[0:n-1]$. **Derive** a recurrence relation for the worst-case complexity $W(n)$ and **solve**.

Solving Recurrence Relations

6. [10pts] Page 131, Exercise 3.35 a) and b).

Mathematical induction

7. [10pts] Page 133, Exercise 3.43