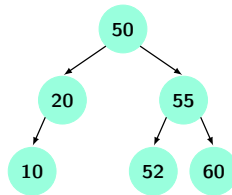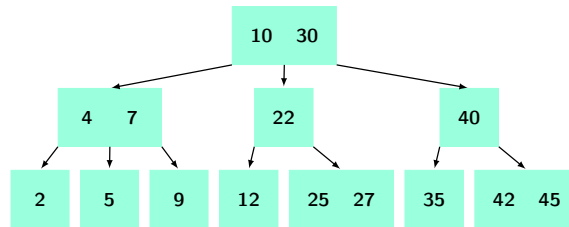# Week 12 Preparation

Instructions to the students: The preparation problems are not assessed, but we strongly recommend that you try to solve them before your applied class this week. These preparation problems test your basic knowledge of the contents taught in the seminar of the previous week. The problems in the applied class assume that you have this basic knowledge and will build on top of it. You might find it helpful to try these problems before doing the quiz that is due this week.

Problems

Problem 1. Insert 5 into the following AVL tree and show the rebalancing procedure step by step.
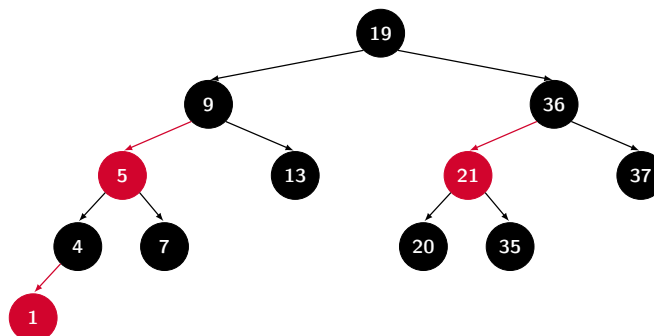

Problem 2. Sequentially perform the following operations on the given 2-3 Search Tree:

(a) Insert key 6

(b) Insert key 7

(c) Insert key 50

Problem 3. Consider the following Left-Leaning Red-Black Tree:

Visualise the tree after performing each of the following actions:

(a) Insert key 12

(b) Insert key 8

(c) Insert key 15

Assume the effects of previous insertions persist for the next insertion.