

PHYS 483 Problem Set 8

Date: Thursday, May 22th, 2003

Due date: Thursday, May 29th, 2003

Important: There is no lecture on May 29th. The problem set should be submitted to the assistant Evin Gültepe on this date. The final deadline for submitting all unsubmitted homeworks is Friday, May 30th, 2003, until midnight, or the last time you can find Evin in the evening, whichever happens first.

- **Problem 1** (30 points) *Introduction to Algorithms, page 267, exercise 14.2-2*

Write pseudocode for RIGHT-ROTATE.

- **Problem 2** (35 points) *Introduction to Algorithms, page 272, exercise 14.3-3*

Show the red-black trees that result after successively inserting the keys 41, 38, 31, 12, 19, 8 into an initially empty red-black tree.

- **Problem 3** (35 points) *Introduction to Algorithms, page 277, exercise 14.4-3*

In Exercise 14.3-3 (Problem 2), you found the red-black tree that results from successively inserting the keys 41, 38, 31, 12, 19, 8 into an initially empty tree. Now show the red-black trees that result from the successive deletion of the keys in order 8, 12, 19, 31, 38, 41.