Homework 6 Due day: April 28

All solutions should be typed, using Latex preferably. Briefly explain the correctness and complexity of your solution.

(1) Chapter 11, 1
(2) Chapter 11, 6
(3) Chapter 11, 8
(4) Adversary supplement one: 5.19
(5) In Stan Smith group of 2015 ATP world tour finals, there are four players Federer (F), Djokovic (D), Berdych (B), and Nishikori (N). In the round-robin meetings, suppose Federer beats Berdych (denoted as F → B), D → N, N → B, F → D, N → F (*), and D → B. (*: the actual result was the opposite.)
   a. Find all the kings in the group tournament.
   b. Find all the sorted sequence of kings in the group tournament.
   c. Prove that for any round-robin tournament, there is at least one king and one sorted sequence of kings.