COS 487: Theory of Computation

Fall 2010

Assignment #4

Due: Friday, Nov 19 6PM

Sanjeev Arora

Suggested reading: Sipser Chapter 7.

Additional reading: Arora Barak Chapter 4.

Collaboration Policy

You are allowed to collaborate with other people enrolled in this class. If you solved a particular problem in collaboration with somebody else, please mention the collaborator(s) name.

It is a violation of class rules to look at solutions to any of the problems from any other person or source, including online ones.

Problems:

- $1. \ \mathrm{Sipser} \ 7.18$
- 2. Sipser 7.23
- 3. Sipser 7.29
- 4. Sipser 7.36
- 5. Sipser 7.44
- 6. Sipser 7.45
- 7. Show that the problem of finding roots of multivariate polynomials over the integers which have degree at most 6 is NP-complete.