Homework 6 – Due Wednesday, March 5, 2008 before the lecture

Please refer to the general information handout for the full homework policy and options.

Page limit You can submit **at most** 1 page per problem, even if the problem has multiple parts. If you submit a longer solution for some problem, only the first page will be graded. This homework contains 4 mandatory and 1 optional problem, worth 10 points each.

Reminder Collaboration is permitted, but you must write the solutions *by yourself without assistance*, and be ready to explain them orally to the instructor if asked. You must also identify your collaborators. Getting solutions from outside sources such as the Web or students not enrolled in the class is strictly forbidden.

Exercises Please practice on problems 5.23, 5.26, 6.2, 6.6, and 6.7. The material they cover may appear on exams.

Problems

0. (**Survey**) Please fill out the survey on Angel. Your responses will be taken into account for the rest of the course. Speak up!

1. (**Turing-recognizable iff** $\leq_m A_{TM}$) Book, 5.22.

2. ($AMBIG_{CFG}$) Book, 5.21.

3. (**2DIM-DFA**) Book, 5.27.

4. (**Program**) Give a program that prints itself out. Your program should be in the spirit of the recursion theorem. You can use Java, C or C++.

   Submit your code via email to Ge ⟨gur112⟩, but not before Tuesday. If you absolutely do not know any of the programming languages listed above, you can negotiate the language with Ge, but so far he has agreed to grade solutions only in the languages listed above.

5*. (**Optional, no collaboration, hand in separately**) Book, 6.6.