COMP 301
Assignment 6
Due 10:30, Thursday, December 5, 2002
All problems are of equal value.

Reading
Sipser, Chapter 7.

Practice
Sipser, 7.1-9, 7.12-16, 7.18-25, 7.27, 7.29-7.33.

To Be Handed In
1. Sipser, 7.10.
2. Sipser, 7.11.
5. Sipser, 7.28.

Open Problem
Freecell is a solitaire type game available with versions of Windows since 95. It is known that there exist deck orders which result in unsolvable games. As far as I know there is no polynomial time algorithm to decide given a deck order if it is solvable. My guess is there is a reasonably natural generalization of Freecell (using multiple decks/variable length suits/ variable number of free cells/etc or some combination) which can be shown to be NP-complete. If you can come up with a variation and a proof you will likely gain some amount of fame. Recently tetris was shown to be NP-complete and this was widely reported on the net as well as in the regular press. A starting point for those unfamiliar with Freecell:
   http://home.earthlink.net/ fomalhaut/f FAQ.html