Homework 3: The solutions to the following problems should be turned in class by July 30, 1999.

1. Let $A = \{\langle M \rangle \mid M$ is a DFA which doesn’t accept any string containing an odd number of 1s\}. Show that $A$ is decidable.

2. Show that $L_{\text{sub}} = \{\langle T_1, T_2 \rangle \mid T_1$ and $T_2$ are Turing Machines and $L(T_1) \subseteq L(T_2)\}$ is undecidable.

3. Give an example in the spirit of the recursion theorem of a program in a real programming language (or a reasonable approximation thereof) that prints itself out.