MA/CSSE 474   Homework #4 (30 points)

Please reread the instructions that precede the problem list in the HW1 assignment sheet. They apply here also.

Don't forget the optional survey for 5 points extra-credit.

Key:
    (No symbol) Not required to be turned in. Just be sure that you can do it.
    (t -6)   To be turned in and graded, worth 6 points.

1. (t-6) 5.9(a) *ndfsmtpdfsm*

2. 5.9(c) *ndfsmtpdfsm*

3. (t-6) 5.10 *DFSM for ¬L(M)*

4. 5.11 *Equivalence classes of $\approx_L$*

5. (t-6) 5.11a   [be sure to notice instructions (i) and (ii)]

6. (t -6) 5.11d   [be sure to notice instructions (i) and (ii)]

7. (t-6) 5.12 *minimize a DFSM* Show the details of your work.

Some past questions and answers from Piazza:

In general, not for a specific problem.

When is epsilon/empty string needed for NDFSMs?

I've noticed that we sometimes use epsilon/empty string in NDFSMs to go from state to state and sometimes not.
How do we know when we need the empty string and when we don't?

Answer: It is never necessary to use include epsilon transitions iwhen we create a NDFSM .

In fact we can easily prove that given a NDFSM that includes epsilon transitions, ve can make an equivalent NDtFSA that does not include any epsilon transitions.

So so epsilon transitions are simply a matter of convenience, as is non-determinism itself. Use them when they make it easier to create a machine that accepts a particular language.