Homework 1

Due Date: April 12, 2006   Points: 100

1. (*10 points*) Text, §1.12, problem 6.
2. (*10 points*) The east wing network in the Department of Computer Science is set up so that individual hosts can run web servers and FTP servers that are available to the outside. (Here, "available" means the ability to read and write data.) The hosts can also run email (SMTP) servers available to other hosts on the east wing network, but *not* available to the outside. Instead, all outside mail is routed to a machine named *baton*, which forwards it to the internal host.
   a. Please model this using an access control matrix. Use three hosts, *baton*, *eastie* for a host on the east wing network, and *outie* for an outside host.
   b. Write a command that allows *eastie* to exchange email directly with *outie*, bypassing *baton* entirely.
   c. Now consider a second host called *reallyeastie* on the east wing network. This host has just been added to the network and has no rights initially. Write a command that gives it the ability to send email to *outie* if, and only if, *eastie* can send mail to *outie*.
3. (*20 points*) Text, §2.8, problem 5.
4. (*20 points*) Text, §2.8, problem 6.
5. (*20 points*) Text, §3.9, problem 1.
6. (*20 points*) Text, §3.9, problem 3.

Extra Credit

1. (*30 points*) Text, §3.9, problem 2.