Homework 3

1. What does the principle of least privilege say?

2. In which of the following situations can the access control mechanism of Unix file permissions be used?

   (a) Alice wants to have her files readable, except for her office mates.

   (b) Bob and Sam want to share some secret files.

   (c) Root wants some of her files to be public.

3. What should the architecture of a network application under Unix be that processes potentially hostile data?

4. How can you exploit the fact that every night root has a cron job that deletes the files in /tmp?

5. What does it mean that the program passwd has the setuid bit set? Why is this necessary?

6. What does the Bell — La Padula model ensure? Similarly, what does the Biba model ensure?