Homework Assignment #4

1. (10 points) Why is logging important? What are its limitations as a security control? What are pros and cons of remote logging?

2. (10 points) If two users share access to a segment, they must do so by the same name. Must their protection rights to it be the same? Why or why not?

3. (10 points) A directory is also an object to which access should be controlled. Why is it not appropriate to allow users to modify their own directories?

4. (10 points) Explain why asynchronous I/O activity is a problem with many memory protection schemes, including base/bounds and paging. Suggest a solution to the problem.

5. (20 points) A flaw in the protection system of many operating systems is argument passing. Often a common shared stack is used by all nested routines for arguments as well as for the remainder of the context of each calling process.

(a) Explain what vulnerabilities this flaw presents.

(b) Explain how the flaw can be controlled. The shared stack is still to be used for passing arguments and storing context.

6. (10 points) List three reasons people might be reluctant to use biometrics for authentication. Can you think of ways to counter those objections?

7. (10 points) List two disadvantages of using physical separation in a computing system. List two disadvantages of using temporal separation in a computing system.

8. (10 points) What are some other levels of protection that users might want to apply to code or data, in addition to the common read, write, and execute permission?

9. (10 points) Why should the directory of one user not be generally accessible (for read-only access) to other users?