1. In the access matrix, show what configurations enable:
   - A permission to be copied to another domain. *ans. either the copy flag must be set on the permission or the domain must be the owner of the object.*
   - A permission to be removed from a domain. *ans. the domain remove the permission must have control over the domain it is removed from.*

2. Given the following Take-Grant configuration: can u w y? (Show the sequence of steps or explain why not).

   ans. This can be done by the theorem.
(a) create a
(b) create b
(c) take x to a
(d) grant a to b
(e) grant b to y
(f) take b to u
(g) take y to u

3. What are the limitations of the Unix protection model in providing adequate access controls?
   ans. does not support MAC, setuid mixes up authentication with authorization, only 3 basis for permission (owner, group, other), does not enable control over auditing.

4. How does POSIX 1e address the protection limitations described in the last question.
   ans. supports LBAC, does not fix setuid, has general access control lists, better auditing.

5. Show how Type Enforcement can implement Bell-LaPadula without using any (explicit) lattice.
   ans. you can create a domain for each lattice point with appropriate permission. For example, secret can write secret and read secret, confidential, and unclassified.

6. What problems are CMW’s information and sensitivity labels trying to solve. Give an example of where they are helpful.
   ans. CMW’s information and sensitivity labels are trying to strike a balance between dynamic and static labeling. The dynamic labeling has more precise information about what is in an object, preventing overclassification of an object (eg. an object labeled topSecret which only contains secret information). The static component prevents labels from floating to top, by putting a bound on how high they can go. This enables errors to be reported instead.