1. Covert channels and side channels are definitely a concern for confidentiality. Consider a BLP lattice with low integrity (LI) at the top and high integrity (HI) at the bottom. Discuss whether or not covert channels and side channels are a concern for integrity in this context.

2. On page 71 of the Florincio et al paper authors state: "Focusing as our model does on a single site, we remind readers that the additional benefit of withstanding guessing to users who have reused their password at other sites is not captured in this model." (a) Briefly explain what this statement means, and (b) Discuss how the model can be extended to multiple sites.

3. Consider the role hierarchy in slide 15 of L4. You are told that the aggregation of read permissions in the DIR role is acceptable but the aggregation of write permissions is too risky. Outline a model that modifies RBAC to address this concern. You can bring in concepts such as MAC, DAC, ABAC, UCON, that have been covered in the lectures but only as relevant to your solution. You may go beyond techniques discussed in class.

4. Give an alternate solution to problem 3.