

## CS361 Questions: Week 4

Type your answers and submit them on Canvas by midnight on the due date.

1. If a computer system satisfies BLP, does it necessarily satisfy non-interference (NI)? Why or why not?
2. What would the NI policy be for a BLP system with subjects: A at (Secret: {Crypto}), B at (Secret: {Nuclear}), C at (TS, {})?
3. Explain why it's difficult to prove NI for realistic systems.
4. Explain the difference between separation of duty and separation of function.
5. For each of Lipner's five concerns, explain whether it's about integrity or confidentiality.
6. Give examples of information that is highly reliable with little sensitivity and information that is not so highly reliable but with greater sensitivity.
7. What does it mean that confidentiality and integrity are "orthogonal issues?"
8. Why is Biba Strict Integrity called the "dual" of the BLP model?
9. If a subject asks to read an object and satisfies the BLP confidentiality requirements but fails the Biba integrity requirements, should the access be granted?
10. What assumption is made about subjects in Biba's low water mark policy? Are they considered trustworthy?
11. Does the Ring Policy make some assumption about the subject that the LWM policy does not?
12. Are the subjects in the Ring Policy considered trustworthy?
13. Suppose your integrity labels were partially ordered but not linearly ordered (e.g., like BLP labels). Could you still apply the LWM policy?
14. Suppose the labels are not linearly ordered. Suggest an interpretation for the LWM READ rule when the subject level does not dominate the object level. Does it make sense to take the GLB rather than minimum of the labels in that case? Why or why not?