Basic information:

- This competency demo follows the procedures spelled out in your syllabus. That is, this exam is **closed book, closed internet, closed fellow students.** However, you may use any **handwritten** notes (of your creation) in your notebook.
- This CD is a comprehensive CD looking at material from the entire semester.
    - It is about 50% from the first four topics (logic, proofs, sets, and functions)
    - and 50% from the last five topics (counting, probability, graphs, Big-oh notation, and recurrence/induction relations).
- This CD is thorough. It is done that way so no single question can doom your grade. However, it also means that it will likely take many of you the full time period (1 hour and 50 minutes).
- You should review all of the previous study guides.
    - You should review each of your previous CDs. Each of the outcomes expected is still valid and many (most) of them are tested again.
    - Make sure to review things that gave you difficulty the first time through.
    - But on the flip side, don't overlook reviewing the things that were easy the first time through. Stuff from 2+ months ago might need a refresher.

New outcomes from Chapters 7 and 8.

1. Given an algorithm provide a reasonable approximation of its f()
- What we did in class on 4/26

2. Given an algorithm, provide it's Big-Oh.
- Exercise 7.3.1, 7.3.2, 7.3.3, 7.3.4

3. Given an f() for an algorithm, identify it's Big-Oh.
- Exercise 7.2.1

4. Understand the "order" of the "growth terms."
- Table 7.3.1

5. Given an English description of a sequence, evaluate the sequence.
- Exercise 8.1.1, 8.1.3, 8.2.1

6. Given a mathematical description of a sequence, evaluate the sequence.
- Exercise 8.3.1

7. Complete a proof by induction.
- Exercise 8.4.1

8. Given a recursive function for a mathematical sequence, identify the nth element of the function.
- Participation Activity 8.8.1. Less related, but a good review, is PA 8.8.2