The second test will be 7:15 to 8:45 p.m. on Tuesday Oct. 28 in Bartlett Hall, room 65. Please arrive on time and do not sit right next to anyone else. Please also do me a favor and use the bathroom before the exam starts.

The test will be closed book, closed notes, no computers including no phones, no calculators, no laptops, no tablets, no wrist computers, etc.

The test will include a one-page crib sheet which I will finalize and post on Monday morning. This will be similar to the crib sheet from test1 except that we will remove some of the Propositional Logic material and replace it by ???. Please send suggestions via Piazza before Monday morning. I will try to accommodate all requests that I consider reasonable.

I’m now going to tell you the exact format of the test. There will be four problems worth 25 points each.

1. Problem 1 will be one or two questions of the kind that you did in d4, i.e., construct worlds that satisfy certain formulas.

2. Problem 2 will be one or two questions of the kind that you did in d5, i.e., use Euclid’s algorithm to compute gcds and multiplicative inverses mod \( m \).

3. Problem 3 will be one or two questions of the kind that you did in d6, i.e., with guidance, write some inductive proofs.

4. Problem 4 will contain two questions like Hw3, Problem 3: You will be given two English statements, \( E_1, E_2 \). Your job will be first to translate them to formulas, \( \varphi_1, \varphi_2 \in \text{FO}[\Sigma_{RGB}] \). Then, for each of these \( \varphi_i \)’s:
   - If \( \varphi_i \) is FO-VALID, then give a natural deduction proof of \( \vdash \varphi_i \).
   - If \( \varphi_i \) is FO-UNSAT, then give a natural deduction proof of \( \vdash \neg \varphi_i \).
   - If \( \varphi_i \) is neither, then produce two appropriate worlds \( A_i, B_i \) such that \( A_i \models \varphi_i \) and \( B_i \models \neg \varphi_i \).

**Suggestions for preparing for Test 2:** With an idea towards being able to solve the above four kinds of problems, go over the handouts, homeworks, discussions, and lecture slides which I have posted. Think about sending me suggestions for the crib sheet.

I will post a Sample Test 2 fairly soon.

On Monday morning I will post solutions to Sample Test 2 and h4Ans.pdf.

As always, relax and get plenty of sleep the night before the test.