Topology: Write your own midterm exam. Due: Monday, October 22, 2007.

Your midterm exam for Fall 2007 in Topology will be an exam, with solutions, written by YOU! After turning in your exam and solutions you will meet with me for a 15 minute oral exam to discuss your solutions, problem selection, and any other topic covered so far in class.

The format of your exam should be as follows:

**Part I: 5 Short answer questions.**

These questions should be short proofs/explanations, or calculations, or applications of theorems to a specific example, etc.

**Part II: 5 True/False and WHY questions.**

These true false questions should cover hypotheses of theorems (i.e. state a theorem without one of the hypotheses and explain why it is false), a statement of an important fact, etc. Be creative here! Think about all the examples with unexpected conclusions we have covered, and cook up a surprising true/false question relating to one of these examples. Two or more of the true/false questions should require you to make new conclusions beyond those made in class or on a homework problem.

**Part III: 3 proofs.**

You should have one proof that is rather straightforward, one that is of medium difficulty, and one challenging proof on your exam.

Of the three proofs only one should resemble a homework problem or a problem from class/textbook. Be creative. Think about natural conjectures you might have that you can prove true. You may look at other Topology textbooks for inspiration, but copying a proposition and its proof from another textbook will earn you a grade of zero on the exam.

**Exam Grading:**

You with be graded on the correctness of your solutions and the uniqueness/creativity shown in your problem selection. You will be graded on the breadth of topics covered by your exam. You will be graded on your ability to explain your solutions and your ability to discuss topological ideas during the 15 minute oral exam.

The exam is worth 100 points. 'A' exams will show a solid understanding of the material covered in class (and the text) AND the ability to apply that knowledge to new examples and questions.