Math 101!
September 25, 2001

Announcements:

The Undergraduate Math Table meets Tuesdays at 5:30 in Mather Dining Halls A&B. On Tuesday, September 25, Sara Moss will give an accessible short talk on set theory. On Wednesday, September 26, the only section meeting will be at 4 pm in SC 209. No lecture on Thursday, September 27, due to the Jewish High Holiday. However, you are welcome to use SC 216 for group work between 10 and 11:30 that day.

Reading:

Read Chapter N1 in the Notes, now including §1.1 and as much of §1.6 as makes sense. Look through Chapter W3 of Wolf since we will begin using quantifiers like that soon. Finish reading all of Chapter W5 in Wolf so that you feel pretty comfortable about sets but somewhat uncomfortable about set theory. Don't worry about induction for now.

Problem Set:

A. Are the Kuratowski Axioms independent of one another? Explain.
B. In Wolf, §W5.1: #16 asks for a critique. Also do §W5.3: #4, #7, #10, #16
C. Now try to generalize §N1.4: #1 from last time. State your conjectures carefully.
D. From the Notes, §N1.4: #3 and #4. Do you like interiors or closures better? Why?

Activities:

Talk about at least one of these in section or in the website's discussion section.

A. Discuss problem §W5.1: #12 from Wolf. How bothered are you by such paradoxes?
B. Attend the Math Table about set theory on September 25 at 5:30 at the Mather House.
C. Work on the bees and hives axioms posted in the discussion area of the website. Make up and post other systems to play with. What point does the bees and hives example make about axioms and the terms that appear in them? What about Euclidean geometry then?
D. Consider the axioms for "naïve set theory" that appear in Part IV of Wolf's Appendix 1. Can you put into your own words what some of them mean? How do you know these axioms are not independent? Can you see why any of them are redundant? What is the difference between the Separation Axiom stated here and the Comprehension Axiom mentioned in §W5.1? Why would using the latter instead of the former lead to inconsistency?