

Math 101!
September 13, 2001

Announcements:

The plan is to hold lectures in Science Center 216 rather than in the room originally posted.

No lectures Tuesday 9/18 or Thursday 9/27 due to Holidays. Make-ups later as needed. Sections will start on Wednesday 9/19. Watch the web and e-mail for details about where.

Reading:

On closure operators, §N1.2 - §N1.5 of the Notes handed out and posted on the web.

On general nonsense and logic, chapters W1 and W2 of the textbook by Wolf.

On sets and set operations, §W5.2 of Wolf. (N or W as a prefix means Notes or Wolf.)

Problem Set:

This is a longer than usual assignment, but you will have almost two weeks for it. Try everything by section on 9/19, and, for each problem, bring either a draft answer or a sentence about where you got stuck to exchange for editing. Switch back by 9/25 in class and hand in your final version by the end of that week.

On closure operators, §N1.3: #1, #2; and §N1.4: #1, #2.

On logic and sets, §W2.1: #3, #5, #6; §W2.2: #4, #7; and §W5.2 #6, #13, #14.

Activities:

Talk about at least one of these either in section or on the web site's discussion section.

A. Try §W1.2: #10 and #11. Play Hex with your friends and with the computer. What kind of thinking does it take? You can prove the first player always has a winning strategy. However, no one knows very much of anything about what that strategy actually is. Huh?

B. Try §N1.4: #3 and #4. (See Wolf for DeMorgan's Laws.) Can you make up some alternative axiom systems that work or almost work for capturing the idea of a topological space? That capture other ideas? Why do you think we start with closure operators?

C. Read §N1.6 and discuss what you see as the relation between set theory and logic. DeMorgan's Laws serve as a concrete example (note Wolf gives both forms of each law).

D. Read the posting in the discussion section of the web site of opinions about what mathematics is. Explain what you like about one of the examples there, what you dislike about another, then try making up your own definition.