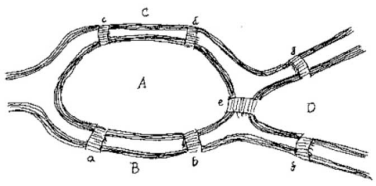
IDS 101 Doing Mathematics

Today

1. Introductions (name, pronouns, where from, interest in math)
2. Class discussion agreement
3. Chessboard problem
4. The joy of discovery: my dissertation problem
5. Syllabus
6. The coloring problem
7. Problems!

Problems

1. What is the exact value of $\frac{1}{4} + \frac{1}{16} + \frac{1}{64} + \ldots$ (the $\ldots$ indicates that the sum goes on forever)?
2. Imagine a bunch of dots on a piece of paper, and suppose that some of them are joined by lines. Call the number of lines coming out of a particular dot the **power** of that dot. What relationship exists between the number of lines and the sum of the powers? Why?
3. In the small map shown, is it possible to start at A, cross every bridge exactly once, and return to A? Assume that you must stick to the roads (no swimming!).



4. Is the number of people in the world who have shaken hands with an odd number of people odd or even?

Homework: Choose one problem you didn't think about today and take it as homework. Feel free to work with whomever you like, but be sure to list all collaborators in your write-up. Be prepared to tell us tomorrow about what you did to work on it.