

Math 409: The little Questions

First Lecture

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`http://www.williams.edu/Mathematics/sjmiller/public_html/409Fa22/`

Williams College

Introduction and Objectives

Introduction / Objectives

Objectives

- Obviously learn problem solving.
- Emphasize techniques / asking the right questions.
- Learn to use computers to build intuition.
- Use these problems as a springboard to see good math.
- Uphold honor of Williams in competitions.
- Looking at equations and getting a sense: $\log -5$

Method: $\frac{p \pm pq}{p + q \pm 2pq}$.

The Green Chicken



Course Mechanics

Grading / Administrative

- Homework (typically due Fri?): 15%, Book Editing 15%, Midterm 30%, Final 5%, Class Participation: 20%, Project Euler: 15%. Late, messy or unstapled HW will not be accepted.
- Pre-reqs: linear algebra (programming a plus).

Office hours

- TBD and when I'm in my office (schedule online: http://www.williams.edu/Mathematics/sjmiller/public_html/schedule.htm).

Other

- Webpage
http://web.williams.edu/Mathematics/sjmillier/public_html/409Fa22/: numerous handouts, additional comments each day (mix of review and optional advanced material).
- Opportunity to help with Pi Mu Epsilon Problem Section.
- Opportunity to help with Math riddles page:
<http://mathriddles.williams.edu/>.
- Opportunity to help with Math Outreach.

Being Prepared

Never know when an opportunity presents itself....



S. J. Miller at the Sarnak 61st Dinner
(copyright C. J. Mozzochi, Princeton N.J)

Being Prepared

- **Your Job:**
 - ◇ Be prepared for class: do reading, think about material.
 - ◇ Come to me / come to each other with questions.
- **My Job:**
 - ◇ Provide resources, guiding questions.
 - ◇ Be available.

Other: Advice from Jeff Miller

- Party less than the person next to you.

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Happy to do practice interviews, adjust deadlines....

Useful links

LaTeX and Mathematica Tutorials and Templates

Templates for using LaTeX for papers, talks, posters, and a Mathematica tutorial (with video): [http:](http://web.williams.edu/Mathematics/sjmillers/public_html/math/handouts/latex.htm)

[//web.williams.edu/Mathematics/sjmillers/public_html/math/handouts/latex.htm](http://web.williams.edu/Mathematics/sjmillers/public_html/math/handouts/latex.htm).

Handout homepage:

http://web.williams.edu/Mathematics/sjmillers/public_html/handouts/handouts.htm.

General advice:

https://web.williams.edu/Mathematics/sjmillers/public_html/advice.htm.