MA111: Contemporary mathematics

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SCHEDULE:

- HW 0 is due Friday, Jan 13th, 2012.
- HW 1A,1B is due Friday, Jan 20th, 2012.
- HW 1C,1D,1E,1G is due Friday, Jan 27th, 2012.
- Exam 1 is Monday, Jan 30th, during class.

Today we will discuss social choice theory, or more simply looking at what "ranking from least favorite to most favorite" forces to happen.

What is contemporary mathematics?

- "It's the study of math that is used every day, not to help lead you into a harder course of math. It can also help you save money with certain deals, and can help you sort out treasure between paranoid pirates that may someday threaten you."

- For the first few chapters, I like to think of math as strategy. We analyze the rules to find a winning strategy.

- Math should be precise: we need to know what answers are right

- Math should be relevant: we need to work examples, before we generalize

- Math should be general: we should learn strategies that work on more than just our examples

Social Choice Theory

- This is sometimes offered as PS491/PS711

- **Write down** your ranking from least favorite to most favorite of:

  - Chocolate

  - Strawberry

  - Cookies-N-Creme

- Form groups of 8-10 (first three rows/last three rows; left side/right side)

- Summarize your group's rankings and prepare to present on board

- Should be brief, but not ignore anyone nor give undue weight

Summarize the whole class

- Let's count how many people had each ranking in the whole class

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- In groups of 3-5 answer the following questions and prepare to present:

  1. Did we get all possible rankings?

  2. How many should there be?

  3. How many rankings of four flavors would there be?

Homework

- Read section 1.1 of the textbook.

- Online homework (20%):

    - 0A is due Today.

    - 1A, 1B are due next Friday. Should do 1A today.