Intro to Contemporary Math

Mini-Exam 1 and Introduction to Fairness in Voting

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Agenda

- Announcements
  - WebWork Homework Assignments
- Fairness in Voting Methods Introduction

WebWork

- A new homework assignment is available. It is due next Monday.

?($5\frac{1}{2}$.1): Agree or Disagree?

In an election, popular candidates should win.

1) Agree
2) Neutral/Undecided
3) Disagree

?($5\frac{1}{2}$.2): Agree or Disagree?

In an election, having more first place votes from the voters should be a good thing.

1) Agree
2) Neutral/Undecided
3) Disagree

?($5\frac{1}{2}.3$): Agree or Disagree?

In an election, dropouts (rage-quitters) should not have any influence on the results after they leave.

1) Agree
2) Neutral/Undecided
3) Disagree

?($5\frac{1}{2}$.4) Popular Candidates Losing?

Which of these voting methods do you think could let a popular candidate lose? Please pick one:

1) Plurality
2) Borda Count
3) Plurality with Elimination
4) Pairwise Comparison
5) None of the above
6) Cannot decide: need more information

Fairness Criterion

A fairness criterion (plural criteria) is a statement (law) which:

- Gives a precise definition of something a (good) voting method should do
- Gives ways to measure and test if a voting method:
  - always does that thing (satisfaction)
  - can fail to do that thing (violation)

Majority Criterion

A candidate who **has over 50% of the first place votes should win.**

- This makes the idea of a popular candidate more precise. We can count each candidate's first place votes to see if there is a majority candidate, and examine if the voting method will pick this candidate as the winner or not, and why.

Next time

- We will discuss our first fairness criterion, the Majority Criterion
- The third homework assignment is due next Monday.