

Math Club Talk

**Thursday, October 23, 2003, 4:30 p.m.
Room 111 Cowley Hall**

SOCIAL CHOICE AND VOTING SYSTEMS

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Abstract: Given a group of people with their individual and different preferences, how do they decide on a decision that somehow reflects “the will of the people”? Interestingly, although a rational individual will have preferences which have the mathematical property of transitivity, group preferences are not transitive. This and other complications affect many social choices, such as apportionment, budgeting, scheduling, division of property, border demarcation, political elections, and of course, choosing pepperoni or sausage for the pizza party. We often vote to make a social decision and in this talk we will introduce different methods of voting. Arrow’s Theorem states that for an election with more than two alternatives there doesn’t exist (and never will exist) a fair voting system. We will briefly examine a few of the fairness conditions and then run an election to demonstrate how several specific voting systems fail to meet the conditions.