

## Homework Assignment No. 3

This assignment is due on Friday, February 26.

**Problem 1** Give an example of a rank method voting system that is not the Borda system.

**Problem 2** For each of the following voting systems, describe what about the voting system is flawed, i.e. what desirable property they lack.

**a** *Plurality Voting*

**b** *The Borda Count Method*

**c** *Sequential Pairwise Voting*

**d** *Condorcet's Method*

**e** *The Hare System*

**Problem** Consider a weighted voting system in which there are five voters, who have weights 5, 4, 3, 2, and 1 respectively.

**a** *What is the least possible quota and what is the greatest possible quota?*

**b** *If the weight-5 voter has veto power, and no other voter does, what is the quota?*

**c** *If the weight-1 voter is a dummy voter, what is the quota?*

**Problem** For the weighted voting system [51: 30, 25, 24, 21]:

**a** *List all permutations in which the weight-30 voter is pivotal.*

**b** *List all permutations in which the weight-25 voter is pivotal.*

**c** *Calculate the Shapley-Shubik index.*