490 Notes 2/5

In the first part of class we worked on determining what voting systems are IIA, Condorcet, Add Mono, etc.. We completed the chart on 2/10, so I've excluded the partially completed chart here.

In the second half of class we went over what are desirable properties of a voting system. The following list is what we came up with.

(a) Majority:
If candidate X receives the majority of 1st place votes then X should win the election.

(b) Plurality with Veto:
In a two-way election the system should agree with simple majority.

(c) Danger X:
If some candidate X puts voters at risk then X should be eliminated. People brought up questions about the viability of this due to an inability to check if a candidate puts voters at risk or not.

(d) Anti-Majority:
If a candidate receives the most last place votes then the candidate shouldn't win.

(e) Loser Drop Out:
If the last place candidate drops out then the relative outcome should stay the same.

(f) At Least Worse than Half-Bad:
If every voter ranks a candidate in the bottom half of their rankings then that candidate shouldn't win.

(g) Kit-Kat's Every Voter:
I didn't get this one too clearly, but I think the gist of it was that every possible voter in some population should be allowed to vote.

(h) Another Version of Every Voter:
Given some voter profile, any single voter should be able to change the results of an election. Here are some other possibly interesting things related to this property:

(i) How many ways can a single voter change the results of an election?

(ii) Could we use this property to measure how fair or unfair an election is? For example, if only 1 voter out of 100 voters can change the results of an election, then that's clearly not fair.

(i) Condorcet Win/Lose:
If a candidate wins every head to head match up in an election, then that candidate should win. If a candidate loses every head to head match up in an election, then that candidate should not win.