Name: _____

MA111-009
Ch. 1 Exam
2011-01-28

Part I: Matching

Match the name of the method to the description:

Plurality	Every pair of candidates goes head to head. Most victories wins.
Plurality w/ elimination	The most number of last place votes is eliminated. Repeat until only one is left.
Rachel's Survivor style	Each first place vote gets the most points, one less point for second place votes, etc. Most total points wins.
Least Harm	The least number of first place votes is eliminated. Repeat until only one is left.
Michael's (Borda) Count	The most number of first place votes wins.
Head-to-head	The least number of last place votes wins.

Match the name of the fair candidate to the description:

Majority winner	A candidate with more than 50% of the last place votes
Majority loser	A candidate who loses every head-to-head matchup
Condorcet winner	A candidate with more than 50% of the first place votes
Condorcet loser	A candidate who wins every head-to-head matchup

Part II: Elimination

Compress each set of preferences after a candidate is eliminated.

3	3	2	1
A	B	D	A
D	D	B	B
C	C	C	C
B	A	A	D

eliminate C →

3	3	2	1
D	B	D	B
C	D	B	C
B	C	C	D

eliminate C →

Part III: Counting

Use each method to determine the winner.

3	3	2	1
A	B	D	A
D	D	B	B
C	C	C	C
B	A	A	D

- Plurality:
- P. with e.:
- Least harm:
- Rachel's:

If you are curious, D wins both the Borda count and the head-to-head.
A is a majority loser; D is a Condorcet winner with only 2 first place votes!

3	2
A	B
B	C
C	A

- Michael's:
- Head-2-head:

Plurality, elimination, and survivor choose A. Least harm chooses B.
A is a majority winner, and C is a majority loser.

Part IV: Fairness:

Describe how each method fails to handle a fair candidate:

3	2
A	B
B	C
C	A

Under least-harm, B wins with 0 last place votes, compared to 2 last place votes for A and 3 for C.

Unfortunately this treats one of the candidates unfairly because they are a (majority or Condorcet) (winner or loser).

Which candidate is mistreated, and which type of candidate are they?

1	1	1
A	B	D
B	D	C
C	A	B
D	C	A

A new method is suggested for counting votes:
under "Least-good" the least number of 1st place votes wins.

The method chooses C, because it got no first place votes.

Unfortunately this treats two candidates unfairly because they are (majority or Condorcet) (winners or losers).

What sort of candidate is C? Is it a majority winner or loser? A Condorcet winner or loser?

What sort of candidate is B? Is it a majority winner or loser? A Condorcet winner or loser?

Part V: Survey

This is just a survey and has no affect on your grade.

Would you prefer our next chapter to be:
(a) more strategy like dividing up the loot, or
(b) something pretty like a tracing game?

Would you prefer: (a) pepperoni, (b) cheese, (c) supreme, or (d) other?
If other please specify:

Would you like more: (a) worksheets, (b) email summaries, (c) small groups, (d) lecture?
(Choose as many as applicable)

If you needed to run an election with three candidates, which method would you use?