

	Alex	Blair	Casey	Devin	Emerson	Gayl	Lee	Marcus	Nikki	Sonia	Toni
1st	Ovid's	Ovid's	Ovid's	Fazoli's	Fazoli's	Ovid's	Fazoli's	K-Lair	Ovid's	Fazoli's	K-Lair
2nd	Panera	Panera	Panera	Panera	Panera	Panera	Panera	Subway	Panera	Panera	Subway
3rd	Subway	Subway	Subway	Subway	Subway	Subway	Subway	Fazoli's	Subway	Subway	Fazoli's
4th	K-Lair	K-Lair	K-Lair	K-Lair	K-Lair	K-Lair	K-Lair	Ovid's	K-Lair	K-Lair	Ovid's
5th	Fazoli's	Fazoli's	Fazoli's	Ovid's	Ovid's	Fazoli's	Ovid's	Panera	Fazoli's	Ovid's	Panera

1. (a) Convert this set of ballots into a preference schedule.

Your answer:	1st	Ovid's	Fazoli's	Panera	K-Lair
	2nd	Panera	Panera	Subway	Subway
	3rd	Subway	Subway	Fazoli's	Fazoli's
	4th	K-Lair	K-Lair	Ovid's	Ovid's
	5th	Fazoli's	Ovid's	K-Lair	Panera

(b) How many voters are needed to form a majority in this election?

(c) If you eliminate Panera, what does the new preference schedule look like?

(d) In Fazoli's versus Panera head-to-head matchup, **whose** votes does each restaurant get?

(e) Name one restaurant that is NOT a Condorcet winner. Explain why.

(f) Name one restaurant that is NOT a Majority winner. Explain why.

2. Here is a preference schedule.

(a) Show work: Who wins using plurality?

	5	4	2
1st	A	B	E
2nd	D	D	C
3rd	C	C	B
4th	E	E	A
5th	B	A	D

(b) Show work: Who wins using plurality with elimination?

(c) Show work: Who wins using pairwise comparison?

(d) Show work: Who wins using the full Borda count?

(5 points for first, 4 points for second, 3 points for third, 2 points for fourth, 1 point for last;
or faster 2 points for first, 1 point for second, 0 points for third, -1 point for fourth, -2 for last)

(e) Show work: Who wins using “the simple combination”?

(1 point for 1st, -1 point for last, no points for the rest)

3. (a) Borda Count declares K-Lair the winner of this election. Which fairness criterion does this violate and why?

	65	35
1st	Ovid's	K-Lair
2nd	K-Lair	Subway
3rd	Subway	Ovid's

(b) Borda Count declares K-Lair the winner of the top election, but Ovid's the winner of the bottom election. Which fairness criterion does this violate and why?

	40	35	25
1st	Ovid's	K-Lair	Subway
2nd	K-Lair	Subway	Ovid's
3rd	Subway	Ovid's	K-Lair

	45	35	25
1st	Ovid's	K-Lair	Ovid's
2nd	K-Lair	Ovid's	K-Lair

(c) Plurality with Elimination declares A the winner of the top election, but C the winner of the bottom election. Which fairness criterion does this violate and why?

	46	18	17	16	3
1st	A	B	C	D	D
2nd	B	C	A	C	C
3rd	C	A	D	B	B
4th	D	D	B	A	A

	46	18	17	16	3
1st	A	B	C	D	A
2nd	B	C	A	C	D
3rd	C	A	D	B	C
4th	D	D	B	A	B

4. (a) Create an example of a preference schedule where Borda Count disagrees with one of the other methods [name the other method, say who won both methods, and explain “how” you figured out your example].

(b) Pick one of the fairness criteria we discussed in class. Explain what it means and name one voting method that violates it.

(c) Why is a restaurant with more than half of the first place votes always a Condorcet winner?

(d) Why does a restaurant with more than half of the first place votes always win a plurality election?