

MA111-008 Mini Exam 1

Name:

Key

1. This question refers to the following 9 people:

Amari 1st Ovid's 2nd K-Lair 3rd Subway 4th Local Taco	Blair 1st Ovid's 2nd K-Lair 3rd Subway 4th Local Taco	Charlie 1st Ovid's 2nd K-Lair 3rd Subway 4th Local Taco	Dakota 1st K-Lair 2nd Subway 3rd Local Taco 4th Ovid's	Emerson 1st K-Lair 2nd Subway 3rd Local Taco 4th Ovid's
Finley 1st Local Taco 2nd Subway 3rd K-Lair 4th Ovid's	Hayden 1st Local Taco 2nd Subway 3rd K-Lair 4th Ovid's	Justice 1st Subway 2nd K-Lair 3rd Local Taco 4th Ovid's	Phoenix 1st Ovid's 2nd Subway 3rd K-Lair 4th Local Taco	

(a) Write down the preference schedule:

	3	2	2	1	
1st	Ovid's	K-Lair	Local Taco	Subway	Ovid's
2nd	K-Lair	Subway	Subway	K-Lair	Subway
3rd	Subway	Local Taco	K-Lair	Local Taco	K-Lair
4th	Local Taco	Ovid's	Ovid's	Ovid's	Local Taco

(b) How many first place votes did each candidate get?

O	3+1	4
K	2	3
S	1	2
L	2	

(c) Which restaurant would be chosen by the "plurality" method?

Ovid's, most first place

(d) Which restaurant would be eliminated first using the "plurality with elimination" method?

Subway, least first place

(e) After that restaurant is eliminated, how many first place votes do the remaining candidates get?

Only Justice's vote changes, and it moves to K-Lair (its 2nd place)		
O	3+1	4
K	2+1	3
L	2	2

2. Explain how to find the winner by Daisia's rule. (Pretend you are explaining it to someone who understands ballots and preference schedules, but has never heard of Daisia's rule; for instance someone in the other sections of MA111.)

Every 1st and 2nd place vote gets 1 point. Most points wins.

Plurality

3. Construct a preference schedule where Ovid's wins by Daisia's rule, but K-Lair wins by Plurality. (You can make more columns if you need to.)

Daisia's

	2	1	0	0	0
1st	Ovid's	K-Lair	Local Taco	Subway	Ovid's
2nd	K-Lair	Subway	Subway	K-Lair	Subway
3rd	Subway	Local Taco	K-Lair	Local Taco	K-Lair
4th	Local Taco	Ovid's	Ovid's	Ovid's	Local Taco

~~K-Lair~~ Ovid's
K
3
2

1st
2
1
0
0

2nd
0
2
1
0

Plurality
2
1
0
0

Daisia's
2
3
1
0

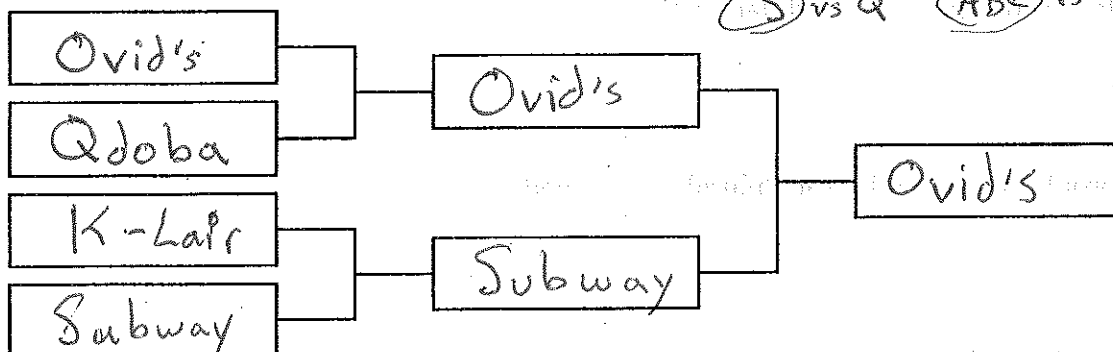
4. A group is trying to decide on lunch.

Alex	Blake	Chase
1st K-Lair	1st Ovid's	1st Subway
2nd Ovid's	2nd Subway	2nd QDoba
3rd Subway	3rd QDoba	3rd K-Lair
4th QDoba	4th K-Lair	4th Ovid's

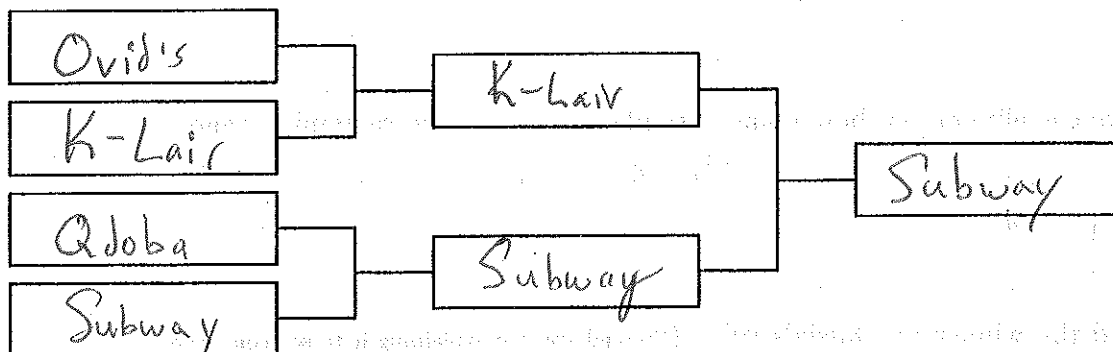
K vs O
K vs S
K vs Q
O vs S
O vs Q
S vs Q

AC vs B
A vs BE
A vs BC
AB vs C
AB vs C
ABC vs nobody!

(a) Write down a bracket where Ovid's wins.



(b) Write down a bracket where Subway wins. (Go Jared!)



(c) Are there any Condorcet winners?

No. Ovid's and Subway win 2 of 3 head-to-heads
K-Lair and QDoba win 1 of 3 head-to-heads

1. This question refers to the following 9 people:

Amari		Blair		Charlie		Dakota		Emerson	
1st	Subway	1st	Subway	1st	Subway	1st	Local Taco	1st	Local Taco
2nd	Local Taco	2nd	Local Taco	2nd	Local Taco	2nd	Ovid's	2nd	Ovid's
3rd	Ovid's	3rd	Ovid's	3rd	Ovid's	3rd	K-Lair	3rd	K-Lair
4th	K-Lair	4th	K-Lair	4th	K-Lair	4th	Subway	4th	Subway

Finley		Hayden		Justice		Phoenix	
1st	K-Lair	1st	K-Lair	1st	Ovid's	1st	Subway
2nd	Ovid's	2nd	Ovid's	2nd	Local Taco	2nd	Ovid's
3rd	Local Taco	3rd	Local Taco	3rd	K-Lair	3rd	Local Taco
4th	Subway	4th	Subway	4th	Subway	4th	K-Lair

(a) Write down the preference schedule:

	3	2	2	1	1
1st	Subway	Local Taco	K-Lair	Ovid's	Subway
2nd	Local Taco	Ovid's	Ovid's	Local Taco	Ovid's
3rd	Ovid's	K-Lair	Local Taco	K-Lair	Local Taco
4th	K-Lair	Subway	Subway	Subway	K-Lair

(b) How many first place votes did each candidate get?

Subway: 4 K-Lair: 2
Local Taco: 2 Ovid's: 1

(c) Which restaurant would be chosen by the "plurality" method?

Subway

(d) Which restaurant would be eliminated first using the "plurality with elimination" method?

Ovid's

(e) After that restaurant is eliminated, how many first place votes do the remaining candidates get?

Subway: 4 K-Lair: 2
Local Taco: 3

2. Explain how to find the winner by Daisia's rule. (Pretend you are explaining it to someone who understands ballots and preference schedules, but has never heard of Daisia's rule; for instance someone in the other sections of MA111.)

Candidates get a point every time they are in first or second place on someone's ballot. The candidate with the most points wins.

Plurality

3. Construct a preference schedule where Subway wins by Daisia's rule, but Local Taco wins by Plurality. (You can make more columns if you need to.)

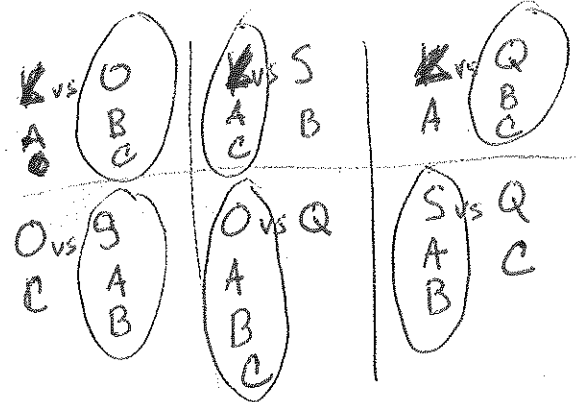
Daisia's Rule

	3	1	1	1	1
1st	Subway	Local Taco	K-Lair	Ovid's	Subway
2nd	Local Taco	Ovid's	Ovid's	Local Taco	Ovid's
3rd	Ovid's	K-Lair	Local Taco	K-Lair	Local Taco
4th	K-Lair	Subway	Subway	Subway	K-Lair

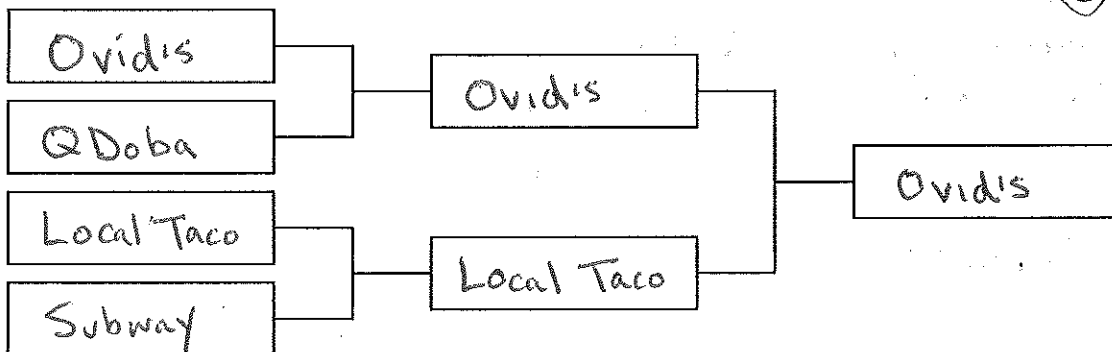
	Plurality	Daisia
Subway	4	4
Local Taco	1	5
Ovid's	1	4
K-Lair	1	1

4. A group is trying to decide on lunch.

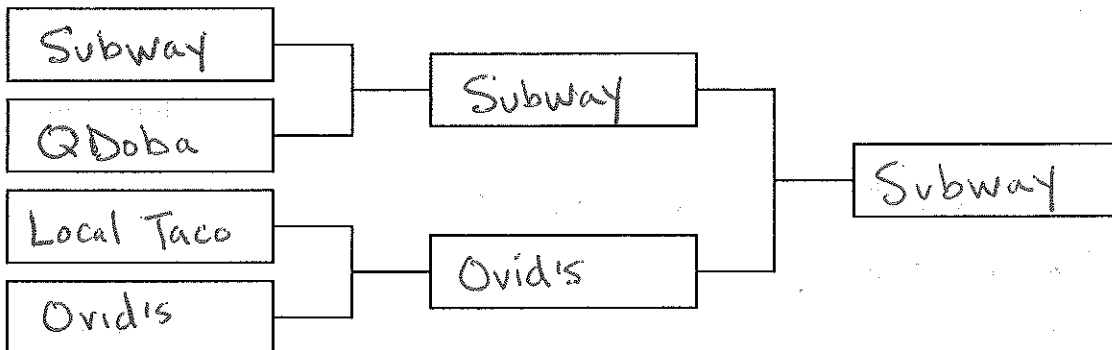
Alex	Blake	Chase
1st Local Taco	1st Subway	1st Ovid's
2nd Subway	2nd Ovid's	2nd QDoba
3rd Ovid's	3rd QDoba	3rd Local Taco
4th QDoba	4th Local Taco	4th Subway



(a) Write down a bracket where Ovid's wins.



(b) Write down a bracket where Subway wins. (Go Jared!)



(c) Are there any Condorcet winners?

No, because no restaurant wins every head-to-head.