MA111: Contemporary mathematics

Entrance Slip (due 5 min past the hour):

Five friends are trying to decide on where to have lunch.

	Avery	Blair	Casey	Dee	Elisha
Favorite	Ovid's	K-Lair	Starbucks	Ovid's	Starbucks
Fine	K-Lair	Ovid's	K-Lair	K-Lair	K-Lair
Least	Starbucks	Starbucks	Ovid's	Starbucks	Ovid's

If they only go to one location for lunch, which location will make the group happiest? Explain why.

Schedule:

- HW 1 is due 7am Tuesday, Sep 8th, 2015
- Mini-exam 1 is in-class on Thursday, Sep 10th, 2015
- HW 2 is due 7am Tuesday, Sep 15th, 2015
- HW 3 is due 7am Tuesday, Sep 22nd, 2015
- Exam 1 is in-class on Thursday, Sep 24th, 2015

Today we try to find the group's preferences from its members' preferences

Expectations

- Please turn in your entrance slips. We will do this every non-exam day, but usually with clickers.
- We'll talk about the answers, and then try to come up with systematic answers in groups
- The syllabus you have skimmed has important policies, dates, and requirements. We'll talk about it at the end.
- Class participation is mandatory
 Treat each other with respect, spend our class time learning our class.
- Exams are in-class, once per chapter. Homework is online and free.
 No textbook.

What should the rule be?

- People came up with different answers to the entrance quiz
- People don't want to argue about lunch, they just want food
- Is there some simple method people could use?
- Write down the rules of how to turn a bunch of individual rank orders into the group's rank ordering
- Test it out on the groups given on the worksheet
- You yourself will work in a group (3-6 people, say your table and the table in front or behind you)
- One of you will present your rule to the class
 - everyone else take notes

Examine other people's ideas

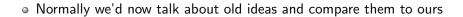
 In your groups, find at least one good thing and one bad thing about each of the rules presented

Be polite and respectful

• Try to think of a group whose preferences seem to "break" the rule

• One of our goals is to find a rule that doesn't break easily

Syllabus



• First, we should go over the syllabus

Exam dates, homework due dates, written project date

Absences

Grading

Old ideas and new meanings for old words

 Most of the homework will focus on old ideas (the exams will include our new ideas too)

Sometimes the hardest part in answering a question is understanding what it is asking. What do the words mean?

I want us all to have a common understanding of some words. You
can think of them as a foreign language that only uses English
words in funny ways.

Today's words

- A ballot is an ordered list of possibilities.
- A preference schedule counts how many ballots of each type there are.

	Avery	Blair	Casey	Dee	Elisha
Favorite	Ovid's	K-Lair	Starbucks	Ovid's	Starbucks
Fine		Ovid's	K-Lair	K-Lair	K-Lair
Least favorite	Starbucks	Starbucks	Ovid's	Starbucks	Ovid's

	2	1	2
1st	0	K	S
2nd	K	Ο	Κ
3rd	S	S	0

• I'll use words like "favorite" and "first place vote"

Three more words

- A voting method takes a preference schedule and returns a single ballot for the group
- The plurality method just counts first place votes. Whoever has the most "favorites" on the individual ballots will be the favorite on the group's summary ballot
- A majority winner is a possibility that has more than half of the first place votes.
- Groups that have a majority winner are much easier to summarize than ones that don't

Exit quiz

A few extra people showed up since the entrance quiz.

Here are the new counts:

	3	2	2	2
1st	0	K	S	K
2nd	K	Ο	K	S
3rd	S	S	0	0

- How many first place votes for Ovid's?
- How many first place votes for K-Lair?
- How many first place votes for Starbucks?
- Which location is the group's favorite if we use the plurality method?