# Unit 6 Test Review Day

# Arrival
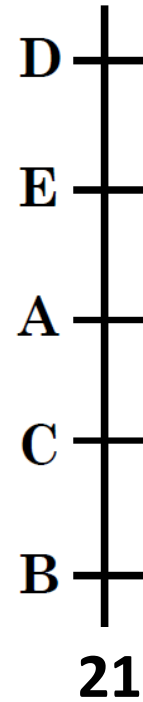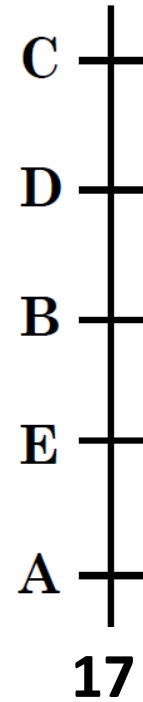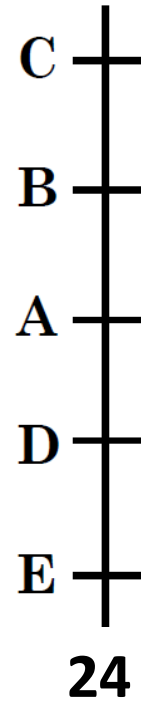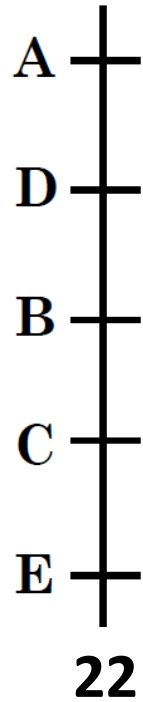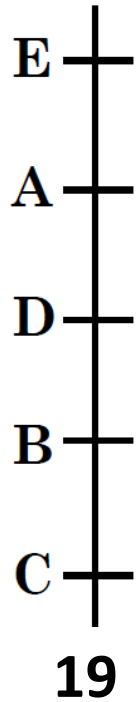
Gather all your groups' Labs together,
Paper Clip them, &
Turn in Monopoly Labs to the Silver Tray

Pick up your warm-up sheet and set up the table format.

Get out Packet p. 9 for checking

# Warm-up Review Day

Given these preference schedules, identify the Runoff, Sequential Runoff, Condorcet, and Approval winners. For Approval, the top 3 were chosen.

| | | | | | |
|---|---|---|---|---|---|
| B | E | A | C | C | D |
| A | A | D | B | D | E |
| C | D | B | A | B | A |
| E | B | C | D | E | C |
| D | C | E | E | A | B |
| **27** | **19** | **22** | **24** | **17** | **21** |
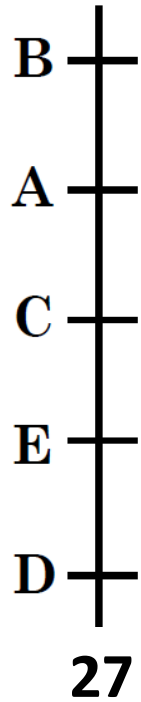
# Warm-up Review Day ANSWERS

Given these preference schedules, identify the Runoff, Sequential Runoff, Condorcet, and Approval winners. For Approval, the top 3 were chosen.

| B | E | A | C | C | D |
|---|---|---|---|---|---|
| A | A | D | B | D | E |
| C | D | B | A | B | A |
| E | B | C | D | E | C |
| D | C | E | E | A | B |
| **27** | **19** | **22** | **24** | **17** | **21** |
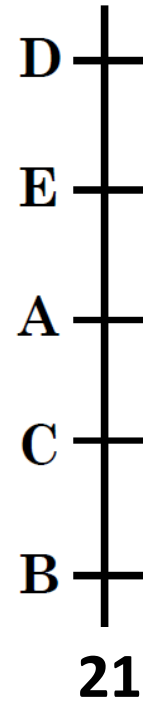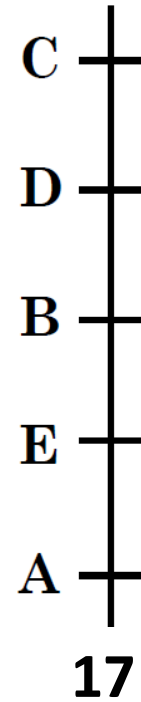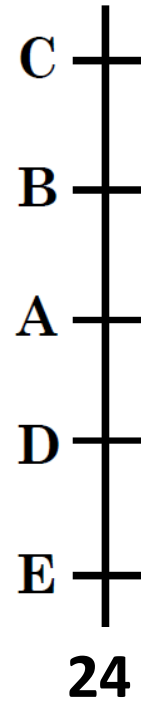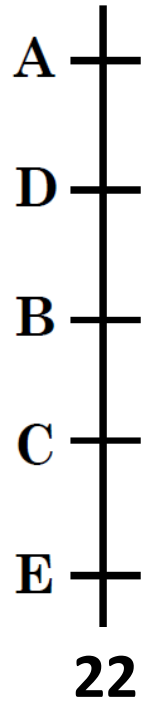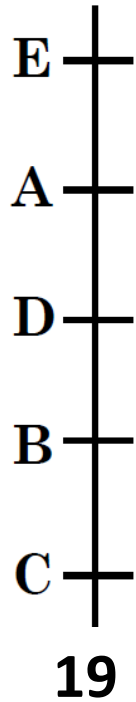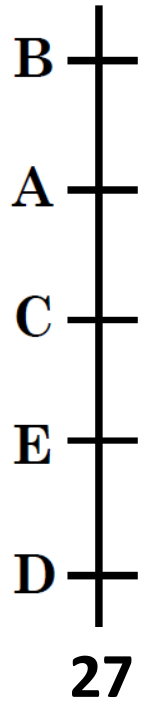
**Runoff: B**                    **Seq. Runoff: A**

**Condorcet: None**          **Approval: A**

**LET'S GO OVER HW PACKET P.9**

# Tonight's HW

Due Tomorrow – BEFORE Test starts

- Half Sheet Exit Ticket Estate Division

- ≥ 1 Station

- Test Review HW Handout
        Skip #9, 10, 12


- Quiz Corrections if earned
        below 80%
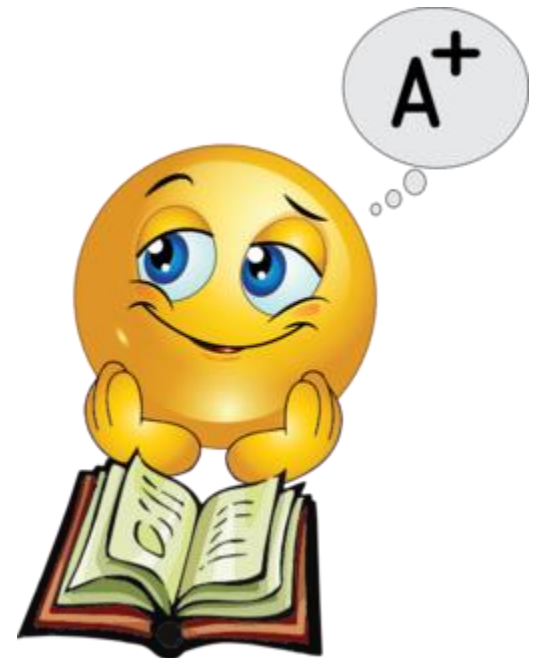
# For your Test!

- Review your quiz, notes, HW and ppts on the class website
- On the next slides, I've listed some key things to know....
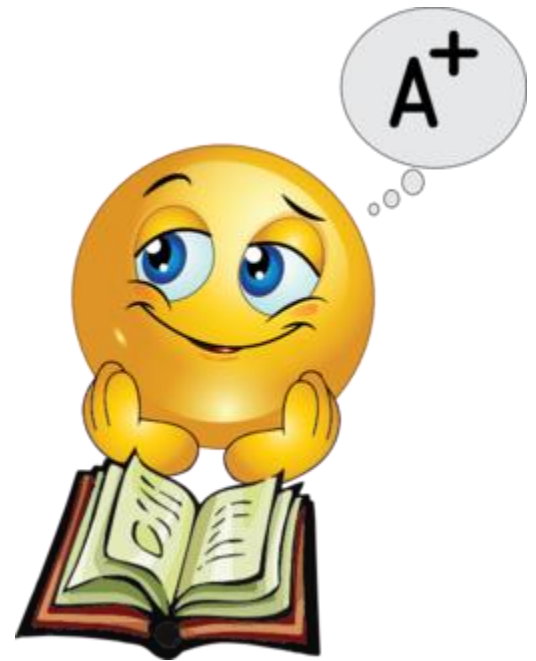
# Ranking Methods

1. Plurality
2. Majority
3. Run off
4. Sequential Run off
5. Borda
6. Condorcet
7. Approval

**Any questions?**

# Arrow's 5 Conditions Necessary for a Fair Group Ranking Method

1. **Non-Dictatorship**
2. **Individual Sovereignty**
3. **Unanimity**
4. **Freedom from Irrelevant Alternatives**
5. **Uniqueness of the Group Ranking**

**Kenneth Arrow won a Nobel Prize and proved one of these conditions is always violated.**

# Algorithm for Dividing an Estate:

1) Each heir submits a bid for each item in the estate.

   (Bids are not made on cash.)

2) A **fair share** is determined for each heir by finding the sum of his or her bids + cash & dividing this sum by the number of heirs.

3) Each item in the estate is given to the heir who bid the highest amount on that item.

4) Each heir is given an amount of cash from the estate that is equal to his or her fair share minus the amount the heir bid on the object(s) he or she received.

   If this amount is negative, the heir pays that amount to the estate.     $fair share - $ from bids *won* = $ heir receives

5) The remaining cash in the estate is divided equally among the heirs.

# Review!

- Work on Quiz Corrections if earned below 80%
- Half Sheet Exit Ticket Estate Division
- Stations: Do at least 1 – you pick which. ☺
- Work on Test Review Handout (Skip #9, 10, 12)

Due Tomorrow – BEFORE Test starts

- Half Sheet Exit Ticket Estate Division
- ≥ 1 Station
- Test Review HW Handout
- Quiz Corrections if earned
  below 80%
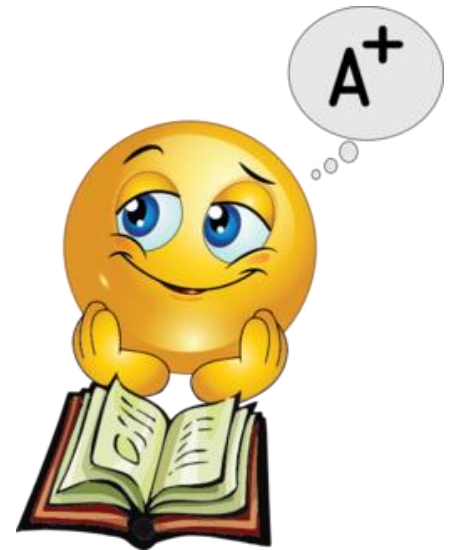
# Review Answers (front side)

1. D w/229    2. B w/ 22    3. A w/ 41    4. E w/41    5. C

6. Tie between C and D

7. Uniqueness (Be sure to review Arrow's 5 conditions of fair group ranking methods)

8. a. Winning coalitions  {A,B ; 4} { B,C ; 5} {A,B,C ; 6}
   b. Power indices: A = 1, B = 3, C= 1

9. Each of the 4 people cuts his into 5 equal pieces, the 5th person chooses 1 from each.

10. Madeline cuts into 5 equal pieces, Sam chooses 2.

11. Total Settlements:
        Anne- Computer, Car and pays $1,383.75
        Dave- receives $3,977.75
        Jay- Stereo and receives $3,406

# Next Slides Skipped Fall '18

- Skipped these topics for Fall '18

# Continuous Division

- **Divider Chooser**
- **Lone Divider**
- **Lone Chooser**
- **Last Diminsher**

# WARM UP: APPORTIONMENT     (1/2 SIZE SHEET)

A school can offer a total of 35 sections of mathematics courses. Students have registered for the courses as shown in the table below.

| Course | Algebra | Geometry | PreCalculus | Calculus |
|---|---|---|---|---|
| Enrollment | 339 | 230 | 190 | 116 |

Find the apportionment using the methods of Hamilton, Jefferson, Hill-Huntington, and Webster and record in the table below.  For Jefferson, Hill-Huntington, and Webster, state the adjusted ratio that you use.

| Enrollment | Initial Quota | Hamilton | Jefferson | Webster | Hill-Huntington |
|---|---|---|---|---|---|
| Algebra 339 | | | | | |
| Geometry 230 | | | | | |
| PreCalculus 190 | | | | | |
| Calculus 116 | | | | | |

# WARM UP: APPORTIONMENT ANSWERS

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| Enrollment | Initial Quota | Hamilton | Jefferson | Webster | Hill-Huntington |
|---|---|---|---|---|---|
| Algebra 339 | 13.56 | 13 | 14 | 13 | 13 |
| Geometry 230 | 9.2 | 9 | 9 | 9 | 9 |
| PreCalculus 190 | 7.6 | 8 | 8 | 8 | 8 |
| Calculus 116 | 4.64 | 5 | 4 | 5 | 5 |