Problem Set 1: A N S W E R K E Y

1. Suppose there are three voters, A,B, and C and three alternatives, X,Y, and Z. Assume the following preference orderings:

A: X>Y>Z
B: Y>X>Z
C: Z>Y>X

What is the group's preference ordering (assume round-robin voting)? Is this a Condorcet winner? Why or why not? (10 points)

In round-robin voting the following results would emerge:

x *vs.* y: y wins 2-1
x *vs.* z: x wins 2-1
y *vs.* z: y wins 2-1

Group choice: y.

Group's preference ordering: y>x>z.
There is a stable group preference ordering. It is a Condorcet Winner.

2. Suppose that A,B, and C have the following preference orderings:

A: X>Y>Z
B: Z>X>Y
C: Y>Z>X

What is the group's preference ordering (assume round-robin voting)? Is this a Condorcet winner? Why or why not? (10 points)

In round-robin voting, the following results would emerge:

x *vs.* y: x wins 2-1
x *vs.* z: z wins 2-1
y *vs.* z: y wins 2-1

Group choice: No majority winner.

Group's preference ordering: x>y>z>x.
There is not a stable group preference ordering as it indicates the group's preferences are intransitive. It is not a Condorcet Winner.

2. Consider the preference orderings in problem 2. Suppose that instead of round robin voting, votes were cast in a single-elimination manner. Further, suppose

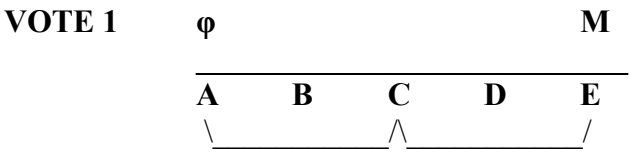
that of the three voters, voter C had agenda control. Given C's preferences, which of the three "agendas" would C prefer to vote on (i.e. A's preferences, B's preferences, and C's preferences comprise the three agendas). Why? (8 points)

Given the preference orderings in problem two, if C were endowed with agenda control and voting were single-elimination, then C would chose the agenda for voter B. This is because in a pairwise vote, we see that z defeats x, 2-1. We then see that y defeats z, 2-1. The alternative y would be the group's choice. Since y is voter C's preferred outcome and since the agenda for B produces this outcome, C would choose agenda B.

4. Find the median voter on the following committees with ideal points as given:
   a. A=200, B=100, C=25, D=16, E=22, F=63, G=57
   ANSWER: 57, 60 is winner
   b. A=200, B=100, C=25, D=16, E=22, F=63, G=75
   ANSWER: 63, 65 is winner
   c. A=200, B=100, C=57, D=16, E=22, F=63, G=57
   ANSWER: 57, 60 is winner
   d. A=200, B=100, C=25, D=16, E=22, F=63
   ANSWER: 44 (or no voter is at median), 60 is winner
   e. A=200, B=100, C=25, D=16, E=22, F=63, G=57, H=22
   ANSWER: 41 (or no voter is at median), 60 is winner

5. Suppose that each of the preceding committees voted on the following alternatives: φ=60, Y=65. Assume that the utility curves are symmetrical and that voting proceeds under majority rule. Find the resulting policy outcome. **(SEE ABOVE)**

6. Suppose there are five members of a committee (A, B, C, D, and E), each spread evenly along a unidimensional policy space. A vote is taken under majority rule between the proposal and the status quo. If the proposal wins, it becomes the new status quo. Suppose the status quo is at A, and that committee members each have the opportunity to propose their ideal point in the following order: E, C, A. Where will policy be at the end of the agenda?



OUTCOME: φ>M, 3-2. This is because C is at the dividing line between the two proposals. Since C is indifferent to the two choices, the status quo prevails conventionally.

VOTE 2 **φ** **M**

A B C D E

_____/_____/

OUTCOME: M> φ, 3-2. This is because B is at the dividing line between the two proposals. Since B is indifferent to the two choices, B prefers φ, but C,D,E prefer M.

VOTE 3 **M** **φ**

A B C D E

OUTCOME: φ>M, 4-1. This is because B is at the dividing line between the two proposals. Since B is indifferent to the two choices, B prefers φ, as well as C,D, and E.

At the end of the agenda, policy will be at C, the median voter's position.

7. How does your answer to the previous question relate to the median voter result? (5 points)

Under the median voter theorem, if the number of voters is odd, if votes have single-peaked preferences in a one-dimensional space, and if they vote under pure majority rule, then the median voter's ideal point will prevail. The nice thing about this result is that all we need to know to understand what the winning position will be is to know where the median voter's position is located.

8. Consider the following unidimensional spatial model:

C φ M

In this model, "C" denotes the median ideal point for a congressional *committee*; φ denotes the status quo policy, and M denotes the chamber median (i.e. the median ideal point for all of the legislators in the chamber). Suppose that in this institution, committees are endowed with gatekeeping power whereby they have the parliamentary right to refuse to report a bill out of committee.

a. Given these preferences and assuming majority rule and open amending on the floor, why would the committee's preference be to *refuse* to report legislation to the floor?

The committee would refuse to report legislation because the status quo position is far preferable to the committee than is the chamber median. Reporting nothing out of committee ensures that policy will remain at the status quo.

b. If legislation were not reported to the floor, where would the policy end up being located?

If legislation were not reported to the floor, policy would end up being located at the status quo position (φ).

c. Finally, if the committee reported legislation to the floor, where would policy end up being located, and why? (15 points total)

If the committee reported legislation to the floor, policy would end up being located at M, the chamber median. The reason for this is straightforward. Because there are no restrictions on amending and voting is majoritarian, the location of the chamber median would have an empty winset. There would be no policy alternatives that could defeat M under these conditions. This is precisely why the committee enforces its gatekeeping power.

9. Return to problem 9. How is the median voter result affected by the institutional arrangement giving committees gatekeeping power (i.e. the power of the committee to do nothing [not report the bill])? (5 points)

Gatekeeping power "prevents" the median voter result from holding. By failing to release any alternative to the status quo, the committee ensures the status quo policy holds. Thus, the location of policy does not gravitate to the median position, but rather, stays at a (relatively) extreme position. Since the median voter theorem predicts convergence, we see that gatekeeping power---an institutional arrangement---prevents convergence. This is an example of how antimajoritarian restrictions can negate the median voter result. In the end, you get a non-centrist outcome.