

Math 110: Assignment 13, Part 2. Name _____

Due Friday, April 23 at 3:00 pm. Neatness counts. Attach additional pages if needed.

1. a) Consider the following **range ballot** results with for an election with three candidates. The voters were allowed to rate the candidates from 1 to 5 (with 5 the most favored). Who is the range vote winner? Show your work.

	12 Voters	6 Voters	10 Voters	10 Voters	14 Voters	5 Voters	Range
Mo	5	4	3	4	3	1	
Larry	3	5	4	1	1	2	
Curly	2	1	1	5	5	5	

- b) Let’s assume that if a voter were asked to rank the candidates (first, second, and third choice), then the voter’s rankings would reflect their ratings of the candidates. For example, a voter who rated Mo 2 out 5, Larry 5 out of 5, and Curly 1 out of 5 would rank Larry as first, Mo as second, and Curly as third. Make a table that shows the complete set of rankings for the voters in this election.

	12 Voters	6 Voters	10 Voters	10 Voters	14 Voters	5 Voters	Plurality	Borda
Mo								
Larry								
Curly								

- c) Who is the plurality winner? Why?
- d) Who is the Borda count winner? Show your work.
- e) Is there a Condorcet winner?
- f) Americans believe in “majority rules:” A candidate who is the first choice of a majority of the voters should be the winner. It is one of the Fairness Criteria discussed in *An Introduction to the Mathematics of Voting* and in class. In this problem, did any of the voting systems violate the Majority Criterion? Explain.

Problem	Points	Score
1.9	10	
#3	2	
#9(b)	2	
1	16	
2	10	
Total	40	