

# Quiz 1, Math of Democracy

Fall 2019, Dr. Adam Graham-Squire

Name: \_\_\_\_\_

1. Find the winner of the following election using the Plurality, Instant Runoff, Pairwise Comparison, and Borda count methods. Then use that information to make an argument for which candidate you think most deserves to win the election:

Number of voters	3	5	7	6
1st choice	A	A	B	C
2nd choice	B	C	D	B
3rd choice	C	B	C	D
4th choice	D	D	A	A

2. Now suppose that in that election,  $B$  and  $D$  were from the same party. Before the election occurs,  $D$  realizes that everyone likes  $B$  better and thus  $D$  drops out from the race. The preference schedule now looks like:

Number of voters	3	5	7	6
1st choice	A	A	B	C
2nd choice	B	C	C	B
3rd choice	C	B	A	A

Calculate the winner for the Borda count now. Is there anything disconcerting about the result? If so, what? And does it change your opinion about who should be the winner?