

Quiz 4A, Math of Democracy

Fall 2019, Dr. Adam Graham-Squire

Name: _____

Below is the election data from the House of Representatives elections for the state of Ohio in 2018, with the statewide averages listed at the bottom of the table. Do a preliminary analysis of the fairness of the districts in this election by looking at some of the topics we have covered in this class, and then summarize what those findings tell you. Specifically, you should:

- (a) Look at proportionality of the election in terms of statewide vote and number of districts won.
- (b) Calculate the efficiency gap.
- (c) Do calculations to investigate what partisan symmetry would tell you. You do NOT have time to do a full partisan symmetry graph, but you should do at least *one* of the following:
 - (i) Calculate the first few “steps” that would occur on the symmetry graph, in either direction.
 - (ii) Calculate a 7% uniform partisan shift from Republicans to Democrats, and how that would change the result(s) of the election.
- (d) Summarize what your calculations tell you about the fairness of this election.

District	Repub	Democ
1	52	48
2	58	42
3	27	73
4	65	35
5	63	37
6	70	30
7	59	41
8	67	33
9	32	68
10	56	44
11	18	82
12	51	49
13	39	61
14	55	45
15	59	41
16	57	43
Average	51.75	48.25

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