Brookline Redistricting Contest!

"Brookline" has 8 Selectman, each representing 5 (equally populated) electoral precincts. The map gives the (8*5=40) precincts and estimates of the Democratic vote proportion in each. Your task is to draw 8 new districts (using the precincts as building blocks).

One class represents the Democrats; one represents the Republicans; and one, a nonpartisan group. Each group of three students in your class will draw a redistricting plan, and your class will then collectively choose one of these plans to compete with the other classes. Your class will also choose one student to give a 1 minute presentation to us all to argue for your plan. Mr. Paris will select the winning class based on who represents their class' assigned interests the best.

Remember the criteria: partisan symmetry (maximize bias in your party's direction; or minimize it if you're nonpartisan); electoral responsiveness; equal Population (5 precincts per district); compactness; and preserving communities of interest.

The attached map includes precinct numbers and (predictions for the) Democratic vote proportions (the Republican proportion is 1 minus the Democratic proportion). To calculate bias (deviation from partian symmetry) and responsiveness:

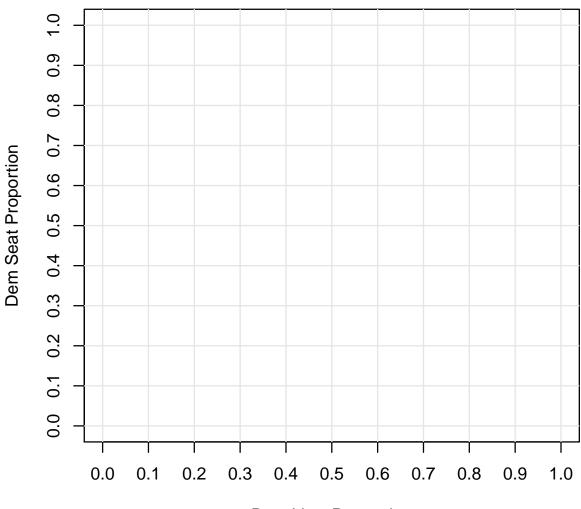
- 1. Draw your chosen districts on the map, using the precinct building blocks
- 2. On the worksheet, write the precinct numbers (and corresponding vote proportions) assigned to each district.
- 3. For each district, calculate the *district vote* (by averaging the 5 precinct votes)
- 4. Calculate the *average district vote* (by averaging the 8 district vote) and *seat proportion* (by determining the proportion of district votes greater than 0.5)
- 5. Plot this point on the seats-votes chart
- 6. Determine the *adjustment factor* by subtracting the average district vote from 0.5
- 7. Add the adjustment factor to each district vote to create a new district votes (check your work: the new average district vote should be 0.5)
- 8. Compute the new seat proportion (by determining the proportion of new district votes greater than 0.5).
- 9. Plot a second point on the seats-votes chart
- 10. Draw the seats-votes curve as a straight line through the two points on the chart
- 11. Partisan Bias is the deviation of the new seat proportion from 0.5; Electoral Responsiveness is the slope of the line

	Dist 1	it 1	Dist 2	t 2	Dis	Dist 3	Dist 4	t 4	Dis	Dist 5	Dis	Dist 6	Dist 7	st 7	Dist 8	t 8
	Pct	D%	Pct	D%	Pct	D%	Pct	D%	Pct	D%	Ъс	D%	Pct	D%	Pct	D%
7																
2																
n																
4																
ŋ																
District Vote (average the D%'s)																
New District Vote (adjust each district vote uniformly so the town average vote is 50%)																
Pct = Precinct Number, D $\%$ = Democratic vote proportion in the precinct (written on the map)	cinct	Numbe	er, D %	e De	mocra	atic vol	te prof	ortio	ו th	e prec	inct (v	vritten	on th	e map	~	

What proportion of seats do the Democrats win when they get 50% of the vote?

Seats-Votes Curve Calculations

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Draw Your Seats–Votes Curve

Dem Vote Proportion

