At-Large Voting

If each voter casts as many votes as candidates are elected, a majority can elect all their candidates, and the minority will elect none. *E. g.*, if there are 891 voters with 9 votes each and 9 candidates are elected, a majority of 446 voters can give 446 votes to each of 9 candidates, and the minority of 445 will elect none since there are only 445 of them to give votes to a candidate.

100 voters, 1 vote per voter, 9 candidates elected

891 voters, 1 vote per voter, 9 candidates elected

6 votes per voter

$$390 > 501 \times \frac{6}{8} = 375.75$$
$$390 < 501 \times \frac{6}{7} = 429.43$$
$$501 \times \frac{6}{7} = 429.43 > 390$$
$$501 \times \frac{6}{8} = 375.75 < 390$$

$$\begin{array}{rcl} x &> (891-x) \times \frac{6}{9} \Rightarrow x > 356.4 \\ x &> (891-x) \times \frac{6}{8} \Rightarrow x > 381.86 \\ x &> (891-x) \times \frac{6}{7} \Rightarrow x > 411.23 \\ x &> (891-x) \Rightarrow x > 445.5 \\ x &> (891-x) \Rightarrow x > 445.5 \\ x > (891-x) \Rightarrow x > 445.5 \\ x &> (891-x) \Rightarrow x > 445.5 \\ x \times \frac{6}{7} > (891-x) \Rightarrow x > 479.77 \\ x \times \frac{6}{8} > (891-x) \Rightarrow x > 509.14 \\ x \times \frac{6}{9} > (891-x) \Rightarrow x > 534.6 \end{array}$$

- A B C D E F G H
- $x \quad x \quad x \quad x \quad x \quad x$
- *y y y y y y y*
- - *w w w w w w*

891 voters, 9 candidates elected

Procedure	1 elected	majority(5)	all(9)
9 districts you draw they draw	50/891 442/891	250/891 642/891	450/891 842/891
at-large voting			
1 vote	90/891	447/891	803/891
6 votes	357/891	446/891(wins 6)	535/891

9 votes 446/891(wins 9) 446/891(wins 9) 446/891

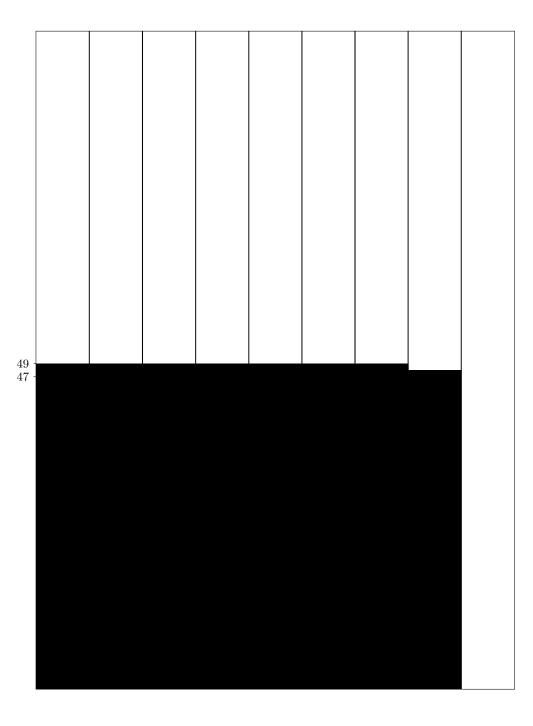


Figure 1: 891 voters, 390 favor your candidate, opposition draws districts

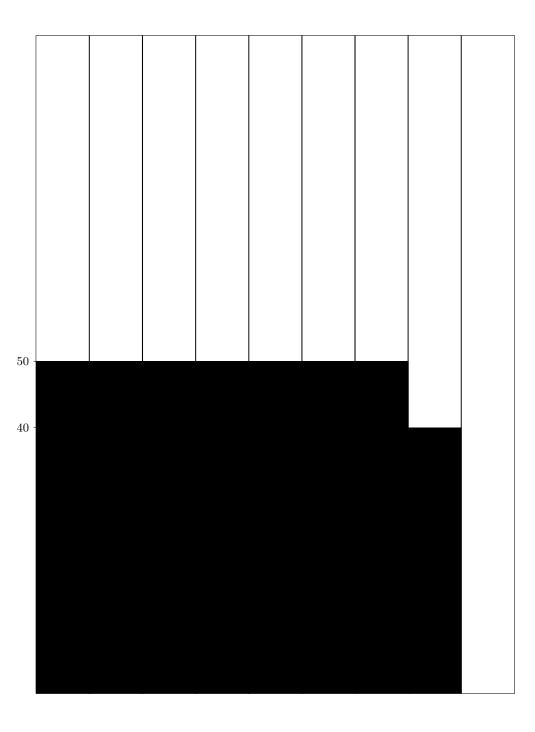


Figure 2: 891 voters, 390 favor your candidate, you draw districts

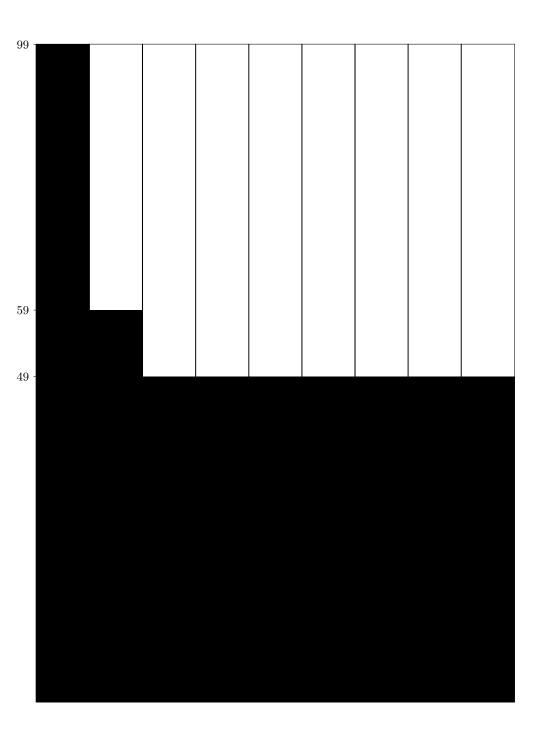


Figure 3: 891 voters, 501 favor your candidate, opposition draws districts

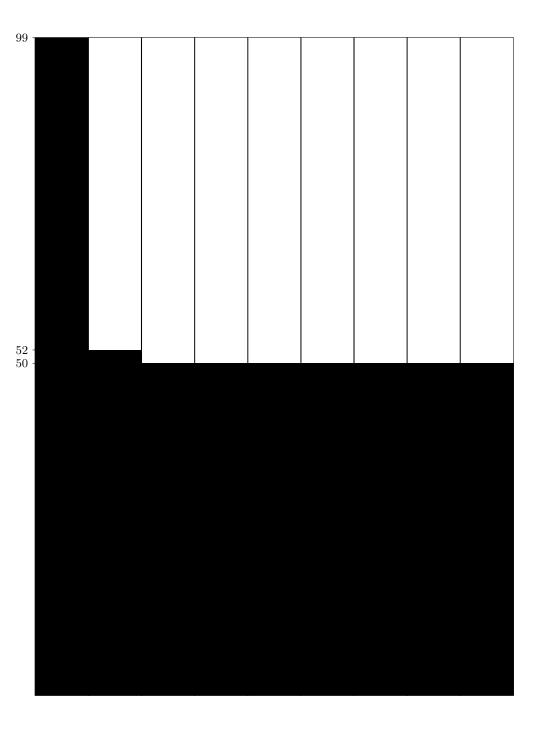


Figure 4: 891 voters, 501 favor your candidate, you draw districts