

MTH 337, Sample Week 9 Quiz

Fall 2022

You will have **15 minutes** to take the actual quiz.

1. Given the vote map below, what is the political lean of the state?

$$\begin{bmatrix} 1 & 1 & 0 & 0 & 0 & 1 \\ 1 & 1 & 1 & 0 & 0 & 0 \\ 1 & 1 & 0 & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 & 0 & 1 \\ 1 & 1 & 0 & 0 & 1 & 1 \end{bmatrix}$$

2. Given the district map below, what is the political lean of the district map?

$$\begin{bmatrix} 1 & 1 & 1 & 1 & 1 & 1 \\ 2 & 1 & 1 & 1 & 1 & 1 \\ 2 & 2 & 2 & 2 & 3 & 1 \\ 2 & 2 & 2 & 2 & 3 & 3 \\ 2 & 2 & 2 & 3 & 3 & 3 \\ 3 & 3 & 3 & 3 & 3 & 3 \end{bmatrix}$$

Now compute the partisan score for the district map.

3. Consider district 3. Which border blocks are eligible to be swapped to a neighboring district?
4. What is the shape score for the district map?