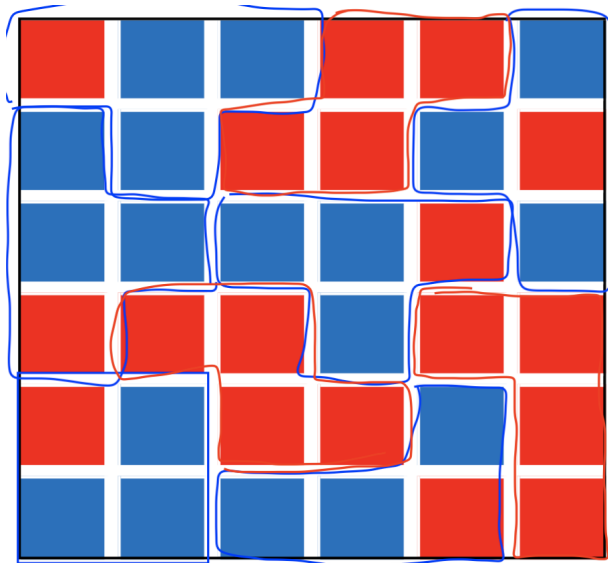


# APSU Math Problem of the Week

## Problem #9: Packing and Cracking

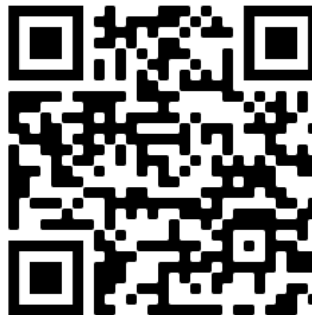
Submission Deadline: 11/5/2021 by 12pm to  
Dr. Brad Fox in MMCS 109 or by email to [foxb@apsu.edu](mailto:foxb@apsu.edu)

The most efficient way to gerrymander this state is to create districts that the opposing party wins 4 to 0 (packing their support into a small number of districts) and then creating districts that your party wins 3 to 1 (cracking their support across the other districts). The solution below was submitted by this week's winner (one of several that found the best solution) in which Blue can win 6 districts while Red only wins 3 districts despite having the same number of voters for each side.



Feel free to take this printout, or find each Problem of the Week by scanning this:

Complete the problem each week for a chance to win a prize



### Rules:

1. Any APSU student can submit a solution individually, or work can be done in a small group of 2 or 3 students.
2. Solutions must be justified when appropriate to be considered correct.
3. Submissions can be made to Dr. Brad Fox (MMCS 109) or electronically to [foxb@apsu.edu](mailto:foxb@apsu.edu)
4. Problems will be posted each Friday afternoon with submissions due by the following Friday at 12pm. Solutions and the weekly winner will be posted once the deadline has passed.
5. One correct submission (whether submitted individually or as a group) will be randomly chosen to win a prize such as gift cards, Galois Math Club t-shirts, and APSU CoSTEM swag, in addition to receiving the glory of having their success published on this webpage.
6. Faculty and other non-students can submit solutions, but are not eligible for prizes.