

FINAL ASSIGNMENT

Due Thursday, May 12 @ 11:59 pm
You can submit as two pdf files to onCourse

- (40 pts) 1. In a typed, three page or so essay, explain your big takeaways from Math 217 this semester. The motivation for this essay is for you to think about the semester in its entirety and to reflect on the insights that will stay with you long after the course ends.
- Do not just give a list of topics we covered, and don't get bogged down in technical details, but you will want to address, at least briefly, each of the three main content areas we discussed this semester: Apportionment, Redistricting/Gerrymandering, and Voting Theory.
 - Honestly reflect on the concepts and problem-solving approaches from this class and how they are interconnected. Have they affected the way you view content from other classes? Have they affected the way you view current events or the world in general?
 - Also briefly address your favorite topic from the semester and the idea(s) that you found the most interesting, surprising, awe-inspiring, or disturbing.
 - And give your essay an appropriate title.
- This essay should be extremely well-polished and thoughtful. Do not aim this essay at me, but think of writing it for yourself so that you could pick it up five years from now and recall the fundamental ideas of the course. And, of course, have some fun with this!
- (5 pts) 2. What was the most interesting thing you learned from another group's presentation this semester? Explain in a few sentences.
- (15 pts) 3. Create examples of profiles with three candidates that have the following properties, or explain why no such profile exists. If the profile exists, be sure to explain how you know your profile meets the criteria and to explain how you constructed it.
- (a) The Borda outcome is $C > A > B$, the plurality outcome is $A > B > C$, there is no Condorcet winner, and B is the plurality runoff winner.
- (b) The plurality point in the representation triangle is $q_0 = (\frac{7}{15}, \frac{2}{15}, \frac{2}{5})$, the antiplurality point is $q_1 = (\frac{17}{60}, \frac{11}{30}, \frac{7}{20})$, and the pairwise outcome is $A > B > C$.
- Hint:* Review the class notes from March 31. What is the point in the representation triangle for the Borda count?
- (ϵ pts) **BONUS QUESTION:** Write a haiku about the transitivity plane.