Exam 1 Essay

Task: Research a topic related to the material we have been studying and compose a 3-5 page essay. This essay should employ as evidence both mathematical theory from our class as well as real-world data from your research. Potential topics have been provided; if you would like to pursue a different question, clear it with me first.

This Essay will be worth the remaining 30 points on your first midterm exam. It is due in class on Friday, February 27. You will lose 3 points for every 24 hours it is late.

- **Research (8 points)**
  - **Excellent:** Information provided is relevant, accurate, detailed, and strongly supports the central thesis. Research is thorough and demonstrates a deep understanding of the situation.
  - **Competent:** Information provided is generally accurate and mostly relevant to the discussion. Research is adequate, but does not push beyond relatively well-known facts.
  - **Needs Improvement:** Information provided is inaccurate or irrelevant. Little or no research is apparent.

- **Mathematical Knowledge (7 points)**
  - **Excellent:** Mathematical theory is applied correctly and in such a way that greatly illuminates key points in the argument.
  - **Competent:** Generally correct use of mathematics with few mistakes. Mathematical theory is employed when necessary, but not for much beyond descriptive purposes.
  - **Needs Improvement:** Gross inaccuracies in mathematics. Little or no use of mathematical theory.

- **Analysis (12 points)**
  - **Excellent:** A well thought-out, critical argument is presented. The thesis is supported by strong details that flow naturally from point to point. Counter-arguments are refuted with convincing evidence.
  - **Competent:** A moderately insightful argument is provided. Details are present, but some points could be improved by more information. A central argument is apparent, but structural problems reduce its persuasiveness. Counter-arguments receive only cursory consideration.
  - **Needs Improvement:** Only a cursory description of the situation with no insight is provided. Little or no attention to detail. Lack of focus on a central thesis. No consideration of possible counter-arguments.

- **Writing (3 points)**
  - **Excellent:** Nearly flawless spelling and grammar.
  - **Competent:** Some spelling and/or grammatical errors occur, but they do not detract from the persuasiveness of the piece.
  - **Needs Improvement:** Grammatical and spelling errors abound in such a way that the central position is discredited by their presence.
Exam 1 Essay Topics

• The 2008 Democratic Primary was hotly contested, and there were claims that the nomination would have gone early to Hillary Clinton had the Democratic Party used the Republican Party’s nomination method. Research the validity of this claim. Which method do you feel is more fair? Should a different method entirely be used? Be sure to explain your position and provide mathematical evidence to support it.

• Third-party candidates have played a controversial role in American politics. Research the (especially recent) history of third-party candidates and their impact on Presidential (you may also consider Congressional and/or Gubernatorial) races. Do you feel that third-party candidates help or hurt their cause by running for election? In what circumstances do you find a third-party candidate is able to be successful? Should our voting systems be altered to better accommodate third-party candidates? Be sure to explain your position and provide mathematical evidence to support your claims.

• The US Electoral College has occasionally elected a President who would have been defeated in a plurality popular vote (specifically in 1876, 1888, and 2000). Research the history of the Electoral College and the fallout from these three elections. Who benefits from the Electoral College method and who suffers? Why has the US maintained the Electoral College despite the three inconsistent elections? How do you feel we should elect our President? Be sure to explain your position and provide mathematical evidence to support your claims.

• Given the importance of population in the Electoral College and the US House of Representatives, the US Census plays a key, if often overlooked, role in our government. Research the (especially recent) history of the US Census and some of the controversies surrounding it. Who are some of the groups of people who have been historically undercounted by the Census? How has this affected the structure of the US (or state, or even local) government? What do you feel is the best way to address these problems? Be sure to explain your claims and provide mathematical evidence to support them.

• Describe a way in which one of the mathematical concepts we have discussed in class plays a role in your life, or in some real-world scenario. Mathematically model and analyze the situation. Does the mathematics confirm/contradict beliefs that you or others held? Have you gained new insight as a result of the mathematical model? What are some aspects of the situation that the mathematics does not effectively model? Does this lead to erroneous conclusions?