Assignment: Write a 2-page essay about an application of mathematics that you find interesting, fun, or useful. This application can relate to something we covered in class, or not.

Purpose: The purpose of this assignment is 1) for you to learn more in-depth about a topic we couldn’t cover in class, and 2) for you to think about how math relates to your life or your interests.

Topics: You can pick any application you find interesting, except applications that we specifically covered in class. For example, using the loan amortization formula to calculate your student loan payments would not be a good essay topic. However, talking about an application (other than task scheduling) using directed graphs would be fine. Here are some examples of possible essay topics:

- Art gallery problem (sometimes called the museum guard problem)
- Flow networks
- Probabilities involved in strategies for Blackjack
- Sports statistics
- Mathematics in music theory

There are tons of other options out there! If you’re having difficulty coming up with a topic to write about, come talk to me.

Content: The audience for this essay is me, so you should assume knowledge of basic mathematics and the topics covered in this class. In other words, you shouldn’t talk about how to solve an equation for $x$, or what a graph is, etc.

Your essay should have a clear, specific topic. It should also cover:

- how you became interested in this application, what you find intriguing about it, or how it is useful to you
- any definitions and background information that are specific to this application
- an explanation of the math involved in the application

Some Specific Requirements:

1. Essays should be typed and double spaced in 12 point Times New Roman with 1 inch margins. Use single sided printing and staple your final paper.

2. You must cite at least one reference. If you use Wikipedia as a reference, you need a second (non-Wikipedia) reference. References should be given in a standard citation style. If you have more than one reference, follow a consistent citation style.

3. Essays should be at least 2 pages, plus references. Title, space between paragraphs, figures, and references do not count towards the page requirement.

4. Essay topics are due by email: 11:59pm, Wednesday November 18th. (If you later discover another topic you would rather write about, talk to me about it.)