MATH 365 Mathematical Modeling Final Project Ideas

Directions:

1. What are some real world scenarios that you think would be interesting to model? Look first at your current interests. Let your mind wander, and be creative. Then write two or three of these vague scenarios down to turn in (three is better – gives you more options). After you turn them in, I will help you sort out the possibilities for each scenario.

Scenario 1: The first scenario, which is the one I am the most interested in is counting cards in blackjack. The first time that I went to Las Vegas I was able to make a lot of money off of this probability game that I was playing. It is because of this that I think I can simplify the theory down a lot to the point where people can learn it almost on the spot. The math behind counting cards is very simple, and thus why I think it can be learned by anyone. The goal of this model would be to show people how to count cards as well as when the optimal time to bid a lot of money would be.

Scenario 2: The second scenario that I think would be a good mathematical model is a model to tell people how their blood alcohol levels are changing over time when drinking socially or in general. This model would aim to tell people what their BAC was while drinking over time and what would happen if they started drinking again at some point. The whole goal of this model would be to answer the question of whether or not someone was under the legal limit to drive.

Scenario 3: The third scenario that I would like to look at is the effect of hunters on deer population. I have been told for I don’t know how long in my life that hunters helped keep the population of deer in check since there are no other natural predators. So I’m curious to see the feasibility of this statement by taking a look at what would happen if there were less hunters after all. The main goal of this model would be to show others who aren’t educated about hunting the facts behind hunting and what we can expect for population levels with different amounts of hunters in said ecosystems.