**ECE 3710**

**Quiz 1**

**Topic: Chapter 1, Sampling and Descriptive Statistics**

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1. Describe the Monte Hall Problem and what is the best approach to tackle it. You are suggested to google the problem.

The Monty Hall Problem is best described as a type of brain teaser, specifically a probability puzzle. Its premise is based on a gameshow that was originally hosted by Monty Hall, hence the name, but has been referenced throughout tv and movies in a variety of genres. Basically, the idea is that there is a prize behind one of the three doors placed in front of you, and you must pick that one or you lose. Using statistics, you can mathematically discern where the prize is with increasing certainty.

Generally, the concept of analyzing the results shows that if you stick with your original pick, you have a ~33% chance of being right. Per one theory, if you were to switch from your original choice, the odds would increase to ~67%.

2. The set of data given below is a set of samples from a population. Find the mean, variance, and standard deviation of the given sample set. Show your work.

𝑋𝑋 = [ 0 , 1 , 5 , 2 ]

XX.sort() = [0, 1, 2, 5]

Average = mean(XX)

**>> Average = 2**

Import statistics

Variance = statistics.variance(XX)

**>> Variance = 3**

Standard\_deviation = mean / 2

**>> Standard\_deviation = 1**