
Culminating Project – Phase #2 Expectations

Name: _____

Due Date: _____

- Phase #2 of your culminating project will consist of creating a casino style game, with virtually no limitations.
 - For example, using dice, a deck of cards, coins, or any other type of tool you can think of.
- ***All mathematical calculations are to be completed in a spreadsheet program (Excel) or other data management software.***

Your report should have the following headings and each bullet should be contained under that heading:

Title Page (1 page)

- Straight forward; clear, concise, to the point.

Introduction (Approx. 0.5-1 page)

- Interest the reader by summarizing a game, similar to how a commercial would advertise a poker website.
- Introduce and explain the rules of your game fully. You should be very particular to what rewards (or penalties) will be given for particular outcomes. For example,
 - “If you flip heads on the second trial, you win two times the number of money you bet...”

Analysis (1-3 pages)

- **Distribution Type**
 - Describe your distribution as discrete or continuous and identify the distribution with justification. For example,
 - “This game is considered to be a binomial distribution because...”
- **Probability Distribution Table**
 - In Excel or another data management program, create a probability distribution table with the probability of each possible outcome calculated using the appropriate formula.
- **Probability Distribution Graph**
 - Graph the information from your probability distribution table. Explain your results fully. For example,
 - “Outcome x_1 offers the best possible probability for the player to win, while the outcome x_2 offers the best possible probability for the casino to win.”
- **Expected Value**
 - Calculate the expected value in Excel or another data management program and explain what the casino should charge in order to have a fair game. You could also explain what a real casino **may** charge in order to make a profit. Use justification.

Conclusion (Approx. 0.5-1 page)

- Summarize your findings and relate them to why one would wish to run the game, or possibly play the game.
- Mention any flaws your game has in favour or against the casino.