Individual Assignment #2

General Instructions

You are to work strictly individually on this assignment; you should not communicate with anyone about this assignment until after it has been submitted by all. Read the assignment entirely, including the instructions at the end, before starting to work. Clearly justify all your answers to get full credit.

Due date: The assignment is due on Friday 10 May, 11:59pm.

What to turn in: Please submit one Excel file containing all your work, as detailed below.

How to turn in your work: Submit your work on BlackBoard by clicking on "Submit Assignment" at the bottom of the left pane menu. If you submit your work multiple times, only your last submission will be considered.

Competitive Bidding

You are bidding for a contract in your business specialty. The contract will be awarded to the lowest bidder. If you win the contract, your profit will be the amount you bid minus the cost of completing the job. You are uncertain about the cost as well as the bids that will be submitted by your competitors. Your base-case analysis indicates that the most likely cost to you is $450,000, but it could be significantly higher or lower. After analyzing some more cost scenarios, considering various outcomes for price levels, negotiations with subcontractors, and time to complete the job, you estimate that the range of costs should be $380,000 to $550,000.

Two other competitors will be submitting bids for this contract. You believe that Competitor #1 is most likely to bid around $600,000, but you feel the possible range is $450,000 to $750,000. Competitor #2 is a company set up by one of your GWSB former classmates. This company is believed to have higher costs but is also something of a "wild card" in your opinion. Competitor #2 is most likely to bid around $650,000, and you think the possible range is $400,000 to $1,000,000.

a) Construct a model that calculates (1) whether you win the contract or not, and (2) the associated profit given your bid, your competitors' bids, and your cost.

b) Using a value of $500K for your own bid, run a Monte Carlo simulation to estimate the probability that you'll win the contract and the expected value of your profit.

c) Now, determine how you should set your bid in order to maximize your expected profit. Provide an answer accurate within 10K. What is your probability of winning the contract at that bid? To support your answers, provide a summary table or graph showing how your expected profit and probability of winning change with your bid.

d) If you are risk averse with a risk tolerance coefficient of $50K, how do the answers to question (c) change?

Instructions*. Prepare an Excel file containing your answers to the questions above. You should be able to show all the relevant parts of your work and results in a single worksheet. Clearly explain how you obtained your answers and identify them by question number.*

---------- END OF INDIVIDUAL ASSIGNMENT ----------