

Assignment 5

BUSI 721

Data Driven Finance I

Jones Graduate School of Business

Rice University

Submit a Jupyter notebook. Copy each question into a Markdown cell and provide your answer in the cell or cells below it.

1. Use the asset data from questions 2 and 3 of Assignment 4, but assume the money market rate of return is 3% and the margin loan rate is 5%. Find the optimal portfolio for an investor with a risk aversion of 6 who does not want to sell anything short.
2. A certain investment is a coin flip. You will either lose 10% of your portfolio or win some percent. Decide how large the win must be in order for you to be willing to flip the coin (there is no right or wrong answer for this). Calculate the number A such that

$$\frac{x - 0.1}{2} - \frac{A}{2} \left(\frac{x + 0.1}{2} \right)^2 = 0$$

where x is the amount you need to win entered as a decimal. A is your risk aversion.