UNIVERSITY OF TEXAS AT AUSTIN

Quiz #16

Required returns. CAPM assumptions.

Problem 16.1. (9 points) State the assumptions of the **Capital Asset Pricing Model.**

Provide your **final answers only** to the following problems:

Problem 16.2. (2 points) You are given the following information about stock X and a portfolio P:

- The annual effective risk-free rate is 4%.
- The portfolio's expected return is 0.08 and the its volatility is 0.25.
- The expected return of stock X is 6% and its volatility is 0.4.
- The correlation between the returns of stock X and the portfolio P is -0.2.

Then, the investor holding portfolio P should invest in stock X. *True or false?*

Problem 16.3. (2 points) Consider a portfolio P consisting of a collection of risky assets. You construct a new portfolio by investing a proportion φ of your wealth in portfolio P and the remainder of your wealth in the risk-free asset. Then, the excess return of the new portoflio is the same proportion φ of the excess return of the portfolio P. *True or false?*

Problem 16.4. (2 points) Portfolio P has expected return 0.08 and volatility equal to 12%. Porfolio Q has expected return 0.10 and volatility equal to 12.5%. Then, we can say with certainty that portfolio P is not efficient. *True or false?*