ECONOMICS 136
FIRST MIDTERM

I. Show your work and briefly explain your answers. If you cannot calculate an answer, explain how you think the problem should be solved [40 points, 40 minutes total].

1. Your wealth is to be divided between the following two assets whose returns are *perfectly negatively correlated ($\rho = -1$)* (there are only two assets available and neither is risk free):

	Expected Return	Standard Deviation
Asset A	10%	20%
Asset B	15%	30%

(a) Give the expressions for the expected return and risk (standard deviation) of portfolios comprised of varying combinations of assets A and B. Sketch the relationship between portfolio expected return and risk, and interpret.

(b) Calculate the share of asset A in the portfolio that has minimum risk. Interpret.

(c) Would an agent with a very high degree of risk aversion hold a portfolio comprised solely of asset A? Would an agent with a sufficently low degree of risk aversion hold a portfolio comprised solely of asset B? Explain.

2. The assumptions of CAPM hold and:

	Expected Return	Standard Deviation
Risk-free asset	4%	0%
Market portfolio	12%	20%

(a) What is the expression for the Capital Market Line and explain how you would form a portfolio with a standard deviation of 40%. What is the expected return of the portfolio? Interpret.

(b) Suppose you learn of a stock with $\beta = 2$ and expected return of 20%. Explain why you would or would not add the asset to your portfolio.

II. Explain why you agree or disagree [40 points, 40 minutes total].

1. The nominal interest rate is the "price of money" and the real interest rate equals the nominal interest rate less the rate of inflation.

2. Agents with declining marginal utility of wealth are risk averse and require a risk premium.

3. A risk-averse agent picks a portfolio on the Capital Market Line (CML), but a risk-neutral agent picks the portfolio of risky assets with highest expected return.

4. In equilibrium, all assets are on the Security Market Line. Assets with $\beta>1$ have a marginal price of risk greater than that of the market portfolio.