ECO 301: Money and Banking **Name:** ____________________
Instructor: James Murray
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Practice Exam 1

1. (10 points) Consider a fixed payment school loan for $70,000. The financing terms include 15 years of monthly payments (180 payments), 7% annual interest rate, compounded monthly, and no payments until six months after you graduate. Suppose you expect to graduate in 18 months. What is your monthly payment? Show your work for full credit.

2. Suppose you purchase a coupon bond that makes a single coupon payments at a price of $938 on the secondary market. The first coupon payment will come to you in one year. The bond was initially issued 4 years ago with a face value of $1000, annual coupon rate of 4%, and a maturity date of 10 years.

   (a) (9 points) What is the expected present value of holding the bond to maturity if you use a 5% annual interest rate until that time?

(b) (9 points) Suppose the bond is held for only one year then resold on the secondary market when the interest rate was 5.5%. If the bond is sold at its expected present value, what is your expected capital gain?

3. (9 points) Suppose people expect the U.S. economy will take a downward turn, leading, which would lead to a decrease in revenues and profits for firms. *Describe and illustrate* the impact on the volume of trade and the interest rate paid for corporate bonds and risk-free bonds, and illustrate the effect on the risk premium.

4. (9 points) Suppose people expect the Federal Reserve to conduct monetary policy actions that result in regular interest rate decreases over the next three years and then let it rise again. The degree of uncertainty regarding future interest rates after three years is large. Draw and describe the shape the yield curve will take.

5. Suppose the Federal Reserve announces it will engage in open market purchase of short-term federal government bonds in the secondary market.

   (a) (9 points) *Describe and illustrate* the impact on the market for money.

   (b) (9 points) *Describe and illustrate* the impact on the market for short-term federal government bonds.

6. (9 points) Suppose there is an increase in uncertainty on the future path of interest rates. Use the market for assets to describe and illustrate the impact on the difference between interest rates on short-term government bonds and long-term government bonds.

7. From October 2011 through June 2012, the Federal Reserve conducted some open market operations that it dubbed, "Operation Twist." It involved open market sales of short-term U.S. federal government bonds and used the proceeds to make open market purchases of long-term U.S. federal government bonds.

   (a) (9 points) *Describe and illustrate* the implications for interest rates on short-term and long-term bonds.

   (b) (9 points) *Describe and illustrate* the implication for the yield curve. Show a yield curve before operation twist, and a yield curve after the policy.

8. (9 points) In 1979, the inflation rate in the United States was very high. By 1981 the Federal Reserve increased the federal funds rate to 19% to combat inflation. Suppose people expected monetary policy would effectively reduce inflation and afterward the Federal Reserve would decrease interest rates again. Draw and explain a picture of a yield curve that illustrates this expectation.