

Place your name on the back of this sheet of paper and nowhere else. Staple your answers on the front of this sheet of paper. Failure to follow these directions will cost you 1 point. Your assignment will be typed, except graphs can be drawn by hand and mathematical equations can be done by hand. Failure to type it will cost you 10 points. If you use double-sided printing or print on the back of scrap paper, I will give you one additional point.

When you use a calculator to find the answer and tell me which keys you hit in what order. For example, if you were doing the example on Page 78, then you would type "I am looking for what I would be willing to pay for the bond, that is PV. Since there are 12 years of 2 payments per year, $N=2*12=24$. I am given the interest rate is the required interest rate of 4%, so $I = 4$. The payments are the face value*coupon rate/# of payments per year = $100*(.1)/2 = 50$. And since I am getting the face value back, $FV = 1000$. Therefore, I typed 24, N, 4, I/YR, 50, PMT, 1000, FV, PV. The calculator then said -1,152.47. It is negative because the outflow is now. The selling price is currently \$1152.47"

- 1) (20 points) Suppose you have a bond which has a coupon rate of 4% paid semi-annually, a face value of \$2000, and you expect to be able to sell it in 5 years for \$1900. If it is currently selling for \$1950, then what is the expected rate of return? Suppose that instead of figuring out the current return, you want to figure out how much you would be willing to pay to get a 3% return. What is the most you would be willing to pay for the bond?
- 2) (15 points) Suppose you bought a bond which paid you \$50 every 6 months for 5 years. You bought it for \$1000 and sold it for \$950. What was your realized rate of return?
- 3) (15 points) Suppose a preferred stock pays a dividend of \$30 per quarter. If it is selling for \$3000, then what is the quarterly return? What is the annual return?
- 4) (10 points) Some bonds sell for more than their face value. Why would somebody pay more than the face value?
- 5) (10 points) Why are stock prices more sensitive to interest changes than 10 year bonds and 10 year bonds more sensitive to interest changes than 1 year bonds? Explain the economics behind it.
- 6) (5 points) Why is the yield to maturity more commonly calculated than a calculation like the first part of Question #1? Explain your logic.
- 7) (5 points) I noticed something very bizarre in the fall of 2000. Very briefly, the yield to maturity of the two-year Japanese government bond was -0.01%. (Obviously, the Bank of Japan was the only party buying the bond then.) Mathematically, how is it possible to get a negative return? Or, from an economic point of view, what can we say about the price paid? Explain your logic.
- 8) (10 points) If the Fed is buying in open market operations, then what does that mean? What happens to money supply? Explain your logic.
- 9) (10 points) The Fed helps with check clearing. What does that mean? Why do we need that?