Problem Set 1

Corporate Finance, Sections 001 and 002
Due Thursday, January 29th

Suggested problems:

RWJ Problems 4.8, 4.11, 4.19, 4.25, 4.42
(use revised problems on http://finance.wharton.upenn.edu/~jwachter/fnce100)

Required problems:

1. You are considering the following one-year investments: (i) Bank A promises to pay 8% on your deposit compounded annually. (ii) Bank B promises to pay 8% on your deposit compounded daily. (iii) Bank C promises to pay 8% on your deposit compounded continuously. Compare the effective annual interest rate (EAIR) on these investments.

2. Which of the following investments do you prefer?

   (a) Purchase a bond with a single payment of $1000 in ten years, for a price of $550.

   (b) Invest $550 for ten years in PNC Bank at a guaranteed annual interest rate of 4.5%.

3. Suppose you are given a choice of the following two securities: (a) an annuity that pays $10,000 at the end of each of the next 6 years; or (b) a perpetuity that pays $10,000 forever, but the first cash payment is 11 years from today.

   Which security do you choose if the annual interest rate is 5%? Does your answer change if the interest rate is 10%? Explain why or why not.

4. Assume the annual interest rate is 6%. Calculate the value of an investment that pays $100 every two years, starting two years from now and continuing forever.

5. Suppose a hedge fund manager earns 1% per trading day. There are 250 trading days per year. Answer the following questions:

   (a) What will be your annual return on $100 invested in her fund if she allows you to reinvest in her fund the 1% you earn each day?

   (b) What will be your annual return assuming she puts all of your daily earnings into a zero-interest- bearing checking account and pays you everything earned at the end of the year?

   (c) Summarize when it is proper to “annualize” using APR (annual percentage rate) versus EAIR (effective annual interest rate).