Appendix 2: Miscellaneous Problems

These are in no particular order, much as you might expect in a test. Use the appropriate formula(s) for each of the problems and answer the question. These are not comprehensive as to all the possible variations of questions, but should give you a basic problem of each topic discussed.

1. A deposit of $100 is made at the end of each month in an account that pays 10% interest, compounded monthly. Find the balance in the account after fifteen years.

2. You want to borrow money to buy furniture for your living room. You obtain a loan for $5000 to be paid back monthly at 8.5% interest over the next 8 years. Find the monthly payment and the total amount of interest you will pay over the life of the loan.

3. Find the effective interest rate for a savings account that pays 4.5% compounded quarterly.

4. Compare the interest rates for savings accounts at the following banks:
    (a) Bank A offers 3.8% compounded daily
    (b) Bank B offers 3.82% compounded weekly
    (c) Bank C offers 3.83% compounded monthly
    (d) Bank D offers 3.85% compounded semi-annually.
    (e) Which bank would you use? (which is the "best deal"?)

5. You are working at a job where you have an IRA account in which you deposit $1000 each quarter at 8% for 15 years. (Interest is compounded quarterly also.) You then leave the company and rollover the money into a savings account that pays 6% continuously for the next 10 years (no additional money added). It is now time to retire, how much do you have saved?

6. A total of $12,000 is invested at an annual interest rate of 9%. Find the balance after 5 years if it is compounded
    (a) quarterly.
    (b) continuously.

7. You are planning on buying a vacation condo and the price tag is $70,000 (including taxes, etc.). If you finance it on a 20-year loan at 6.9%, compounded monthly, how much will your monthly payment be?

8. You want to set aside, in a bank account, an amount of money each month so that you can buy a new car for $20,000 in 3 ½ years. Assuming the annual interest rate is 5.7%, compounded monthly, how much are your monthly payments into your account?