Homework 8

Problems 19 of 2.1: If $1000 is deposited in an account that pays interest quarterly, and if the money grows to $1150 after 2 years, find the interest rate.

Problem 22 of 2.1 (similar to Example 6 on page 21): One bank offers to loan you money at an interest rate of 12% compounded quarterly, and another bank offers to loan you money at 11.8% compounded continuously. Which loan would you prefer, and why?

Problem 19 of 2.2: A fixed monthly payment of $400 is made for 36 months at the rate of 12% per year. Calculate both the present value and the future value of the annuity.

Problem 37 of 2.2: You have saved $25,000 for a down payment on a house, and can afford $1100 per month in payments. If the current interest rates on 30-year mortgages are 9% annually, what is the most expensive house you can afford?

Problem 39 of 2.2: You have taken out a 30-year mortgage of $100,000 at 6% annual interest. Your plan is to sell the house in 4 years, paying off the mortgage at that time. How much will you owe?

Problem 43 of 2.2: Which will be worth more at the end of 5 years?

      a. $100 per month at 0.6% per month
      b. $20,000 earning 0.5% per month

Do also the following problem:

Consider a 30-year home mortgage of $100,000 at 6% per year, compounded monthly. What is the monthly payment? Use Theorem 1 on page 42 to make an amortization schedule of the first 6 months:

Month (k)	Principal P(k)	Interest I(k)	Balance due B(k)
1			
2			
3			
4			
5			
6			

where

P(k) is the amount paid to the principal in the k'th payment,

I(k) is the amount paid to interest in the k'th payment,

B(k) is the balance due after the k'th payment.