Section 5.4 Extra Practice

1. An investment earns interest compounded semi-annually. Find the number of compounding periods over each term.
   a) 1 year
   b) 2 years
   c) 5 years
   d) 10 years

2. An investment earns interest compounded quarterly. Find the number of compounding periods over each term.
   a) 1 year
   b) 2 years
   c) 5 years
   d) 10 years

3. A GIC offered by a Canadian bank pays 2.5% interest per year. What is the percent earned in each compounding period if the interest is compounded
   a) semi-annually?
   b) quarterly?
   c) monthly?
   d) daily?

4. A 4-year personal loan of $10 000 at 7% compounded monthly results in a monthly payment of $239.46.
   a) Determine the total amount to be repaid to the bank.
   b) How much interest is paid on the loan?

5. A 3-year personal loan of $10 000 at 7% compounded monthly results in a monthly payment of $308.77.
   a) Determine the total amount to be repaid to the bank.
   b) How much interest is paid on the loan?
   c) By choosing a shorter payback period, how much less interest is paid than in #4?

6. Kathleen invests $8000 at 2% for 2 years, compounded annually.
   a) Determine n, the number of compounding periods.
   b) Determine I, the interest rate.
   c) Determine FV, the future value.
   d) Use repeated calculations of simple interest to determine the future value.
   e) Compare your answers to parts c) and d).

7. Daniel invests $3000 at 4%, compounded semi-annually for 2 years.
   a) Determine n.
   b) Determine i.
   c) Determine FV.
   d) Use repeated calculations of simple interest to determine the future value.
   e) Compare your answers to parts c) and d).

8. Scott spent $20 000 renovating a house he plans to rent to students.
   a) At $2000 per month rent, how much will Scott make in 1 year?
   b) How much will he earn in 5 years?
   c) How much will he earn in 10 years?
   d) Is the spending on renovations an investment? Explain.

9. Interest on credit card balances is compounded daily. Calculate the daily interest rate for each credit card annual interest rate. Express your answer as a percent, rounded to four decimal places.
   a) 19.5%
   b) 30%
   c) 12.5%

10. Determine the future value of an overdue credit card balance of $2000 if interest is charged for 75 days. Use the daily interest rate in #9b).

11. Kelly gets a $30 000 line of credit to start her business. When she borrows money, the minimum amount due each month is the interest on the amount borrowed. On March 1, Kelly borrowed $5000. Her bank charges her an annual interest rate of 5%, compounded daily.
   a) Calculate the daily interest rate, expressed as a decimal rounded to five places.
   b) How much interest will Kelly be charged from the day she borrowed the money to the end of the month?
   c) What is an advantage of having to pay only the interest each month?
   d) What is a disadvantage of having to pay only the interest each month?