1. Determine the future value and the total interest earned for each simple interest investment.
   a) $20 000, invested for a 5-year term at an interest rate of 4.2%
   b) $5500, invested for a 3-year term at an interest rate of 2.4%

2. Cam has been saving for a car. He has $2500 that he wants to invest, hoping that he will end up with $3000 to use as a down payment. His bank offers a savings account that earns 5.5% simple interest, paid annually. How long will it take Cam to reach his goal?

3. Determine the future value and the total interest earned for each compound interest investment.
   a) Principal of $5000, invested for a 4-year term at an interest rate of 3.6%, compounded monthly
   b) Principal of $24 000, invested for a 10-year term at an interest rate of 6.0%, compounded quarterly

4. Suppose that you have $5000 to invest for 10 years. Which of these investment options would you choose? Explain.
   A. A rate of 5%, compounded annually
   B. A rate of 5%, compounded semi-annually

5. Estimate the value of an investment of $1000 at 9%, compounded annually, for a term of 16 years. How close is your estimate to the actual future value?

6. Connie wants a down payment of $1500 to buy new furniture for her apartment 2 years from now. Her bank offers a savings account that earns 6.0% interest, compounded monthly. What amount does she need to invest now?

7. Hans invested money at 4%, compounded quarterly. Emma invested money at 3.6%, compounded monthly. After 10 years, each investment was worth $5000.
   a) Who made the greater original investment?
   b) Who had the greater rate of return?

8. Jaymee will deposit $500 into a savings account at the end of every 6 months for 5 years. The account earns 3.8%, compounded semi-annually.
   a) What amount will accumulate by the end of 5 years?
   b) How much of this amount will be interest?

9. Darka would like to accumulate $100 000 in savings before she retires 20 years from now. At the end of each month, she intends to make the same deposit in an RRSP. She hopes that the RRSP will grow at 5%, compounded monthly. What regular payment will enable Darka to reach her goal?

10. Deb inherited $20 000 and is thinking about investing the entire amount. Which of the following two portfolio options would you advise her to choose for the next 10 years? Explain.
   A. A 10-year $15 000 GIC at 3.5%, compounded annually, and a 10-year $5000 CSB at 4.0%, compounded monthly
   B. A high-interest savings account at 3.8%, compounded daily, for the entire $20 000

11. In May, Stan borrowed $1500 at 7.2%, compounded monthly, to buy a riding lawn mower for his summer business. He arranged to pay off the loan in 4 months, with a single payment.
   a) What amount did Stan need to pay?
   b) What amount of interest did Stan pay?

12. Marlene has a student loan of $25 000 at 4.2%, compounded monthly. She plans to repay the loan over the next 5 years. The first payment will be due 1 month from now.
   a) Determine Marlene's monthly loan payment.
   b) What interest will she pay over the term of the loan?

13. Monty has a credit card balance of $5200. The credit card company charges 19.5% interest, compounded daily. Monty decides to stop using his credit card and to make monthly payments so he can pay off his debt.
   a) How long will it take Monty to reduce his current credit card balance to zero if he pays $250 a month?
   b) If he doubles his monthly payment to $500, how much sooner will his debt be paid off?
   c) How much interest will he save if his monthly payment is $500 rather than $250?

14. Misty and Danielle are going to be starting their first year of university, and they need somewhere to live.
   • Misty's parents decide to rent a one-bedroom apartment for her, at $800 per month.
   • Danielle's parents buy a four-bedroom house for $205 000, with a down payment of $50 000. They negotiate a 5-year mortgage at 4%, compounded semi-annually, with payments every month. They rent the other three bedrooms to students. Each student pays $750 per month.

   Misty and Danielle will both move after 5 years.
   a) Compare the housing costs for Misty's parents and Danielle's parents.
   b) Who made the wiser housing decision for their daughter? Explain.