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Chapter 7 Practice Test

For questions 1 to 3, select the best answer.

1. Which change would decrease the amount of interest paid over the life of a mortgage?
- **A** Choosing a longer amortization period.
- **B** Reducing the number of payments made per year.
- **C** Switching from weekly payments to monthly payments.
- **D** Making an extra payment once per year.

2. Aniko deposited $200 per month into an account that pays 3.1% per year, compounded quarterly. Which is the best estimate of the future of this account after five years?

A $13 000 **B** $12 000
C $15 000 **D** $10 000

3. Jason has a $5000 personal loan with a bank, at 3.25% per year, compounded monthly. He makes monthly payments of $125. How many months will it take Jason to pay for the loan in full?

A 40 months **B** 43 months
C 45 months **D** 50 months

4. Is each statement true or false?
- **a)** If the monthly payment on a loan is $1000, then the bi-weekly payment is $500.
- **b)** Depositing $20 into a savings account is called an annuity.
- **c)** For all Canadian mortgages, interest is compounded semi-annually.
- **d)** Making a payment of $1200 a month on a mortgage reduces the principal amount owing by $1200.

5. In one year, Tre Luong plans to buy a new mountain bicycle that currently costs $1900. He deposits $125 at the end of each month into an account that earns 3.25% per year, compounded monthly. Will Tre Luong have saved enough money to pay cash for the bicycle in one year?

6. A $185 900 mortgage is amortized for 20 years at 5.45% per year for a five-year fixed term.
- **a)** Determine the monthly payment.
- **b)** Determine the total interest paid after five years.
- **c)** How much debt will need to be refinanced after five years?

7. A charity lottery is offering a grand prize of $50 000 at the end of each year for 25 years.
- **a)** What is the total amount the winner will collect?
- **b)** A fund must be set up to create an annuity for the lottery winner. If interest is earned at 8% per year, compounded annually, determine the present value of the fund on the day the winner is announced.

8. Danielle bought $3500 worth of furniture and does not have to pay the balance for 18 months.
- **a)** If money can be invested at 3.75% per year, compounded monthly, determine the present value required to have $3500 for the due date.
- **b)** Determine the monthly deposit that Danielle must make so she can pay the balance in cash on the due date.
- **c)** Calculate the total amount deposited.

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9. Marek has $12 500 in savings. His parents advised that he start contributing to an RRSP. He opened an account and invested $2500 in a fund that pays 6.5% per year, compounded annually.
- **a)** Determine the future value of Marek's RRSP after one year.
- **b)** If Marek continues to invest $2500 each year, calculate the value of his investment after five years.
- **c)** Suppose he can invest $3000 per year but at an interest rate of 3.25% per year, compounded annually. Which investment would have the greater value after five years? By how much?

10. Svetlana has a debt of $9000. Her bank offers personal loans with terms of one to five years at 7.75%, compounded monthly.
- **a)** Determine the monthly payment for a two-year loan.
- **b)** Calculate the total interest paid on the loan.
- **c)** Determine Svetlana's payment if she chooses to make accelerated bi-weekly payments.
- **d)** Calculate the total interest paid on the loan.
- **e)** Explain why changing the payment frequency reduces the total interest paid on the loan.

11. Tyrell bought a new house for $229 900 with a 10% down payment. The mortgage is at 5.25% per year, amortized over 20 years.
- **a)** Determine Tyrell's monthly payment.
- **b)** Assume the interest rate remains constant. How much will Tyrell end up paying before the house is truly his?
- **c)** How much interest was charged over the life of the mortgage?
- **d)** Tyrells's house is in a development where prices are expected to appreciate by 6% per year. Express the growth in the selling price of the house as an exponential relation.
- **e)** Calculate the estimated selling price of Tyrell's house in 20 years.

12. A $275 000 mortgage is amortized over 25 years at 3.75% per year.
- **a)** Use technology to determine the monthly and the semi-monthly payments.
- **b)** Compare the total amount paid for each payment frequency.
- **c)** Approximately how long would it take to pay the mortgage in full by making weekly payments of $600?
- **d)** What is the effect of increasing the weekly payments by a fixed amount? Use an increase of $1 in the payment to help you explain.

13. Kirk landscaped his backyard three years ago today. He borrowed $10 000 for five years at 6.85% per year, compounded monthly.
- **a)** Determine Kirk's monthly payment.
- **b)** Calculate the amount he has paid on the loan so far.
- **c)** Kirk wishes to pay the rest of the loan in full now. Determine the present value of the remainder of his loan.
- **d)** How much interest will Kirk save by eliminating his debt today?

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