

Chapter 8 Practice Test

For questions 1 to 4, select the best answer.

1. A \$5000 loan is being repaid monthly over a 5-year period at 6%, compounded monthly. Which change would result in a lower total amount of interest being paid over the life of the loan?
 - A changing the repayment period to 10 years
 - B changing the payment frequency to semi-annually
 - C changing the interest rate to 7%
 - D changing the compounding period to annual compounding

2. Which method will *not* allow you to calculate the present value of a simple annuity?
 - A determining the sum of the present values of each of the regular payments
 - B multiplying the value of one regular payment by $(1-i)^n$
 - C using the formula

$$PV = PMT \left[\frac{1 - (1+i)^{-n}}{i} \right]$$
 - D using a TVM Solver

3. Without calculating, choose the approximate total amount of interest paid over the life of a mortgage of \$218 000 at 6% per year, amortized over 25 years. Payments are made monthly and interest is compounded semi-annually.

A \$2000	B \$20 000
C \$200 000	D \$2 000 000

4. Which statement is true?
 - A An annuity is made of equal deposits that must be spaced at exactly 1-year intervals.
 - B The future value of an ordinary annuity can determine the original price of a purchase that is paid for in installments.
 - C The appreciation of a house can be modelled with an exponential function.
 - D Using a payment plan for a purchase always results in spending less than the original price.

5. Determine the future value of monthly payments of \$125 at 3.6% per year, compounded monthly for 2 years.

6. Determine the lump-sum amount needed to generate a retirement income of \$40 000 per year for 25 years, assuming interest at 4.5%, compounded annually.

7. Jeron plans to purchase his first new car next week. He takes out a 5 year loan for \$19 000 at 8.1% per year, compounded monthly.
 - a) Determine Jeron's monthly payment.
 - b) Calculate the total cost of the loan.
 - c) Calculate the total interest paid over the life of the loan.
 - d) Calculate the approximate value of the car 5 years after purchase if it depreciates at a rate of 15% per year.

8. A couple's financial advisor has set up a retirement income fund for them. When they retire, they will draw a monthly income at the end of each month from the fund. Their investments earn 5.7% annual interest, compounded monthly.
 - a) If they want to draw a monthly income of \$6000 for 20 years, determine the amount they will need in the fund by the time they retire.
 - b) Calculate how much total income the fund will generate over the 20 years.
 - c) Calculate the total interest earned by the fund over the 20 years.

Name: _____

Date: _____

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9. A couple obtains a mortgage for \$360 000 on the purchase of a three-bedroom condominium. The mortgage is amortized over 15 or 30 years at 6.96% per year, compounded semi-annually.
- a) Use a TVM Solver to determine the monthly payment for a 30-year mortgage.
 - b) How much will they pay in total over the life of the 30-year mortgage?
 - c) Use a TVM Solver to determine the monthly payment for a 15-year mortgage.
 - d) How much will they pay in total over the life of the 15-year mortgage?
 - e) The condominium is expected to appreciate by 3% per year. Calculate the approximate value of the condominium in
 - i) 15 years
 - ii) 30 years
10. Justice purchased a \$1650 electric guitar and has been making payments of \$50 per month for 12 months on a loan used to buy the guitar. Justice decided to pay off her debt at the end of the 13th month. If Justice's loan is compounded monthly at a rate of 5.75% per year, how much will she need to repay the loan fully at the end of the 13th month?