

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?