Kapoor, Personal Finance
2025 Release
Chapter 1 Solutions

1. *Calculating the Future Value of Property.* Antonio Lopez plans to buy a house for $280,000. If that real estate is expected to increase in value by 3 percent each year, what will its approximate value be six years from now?

Solution: $334,334.64
LO: 1-2
Topic: Calculating the Future Value of Property
LOD: Intermediate
Bloom tag: Application

2. *Using the Rule of 72.* Using the rule of 72, approximate the following amounts.
    a. If the value of land in an area is increasing 6 percent a year, how long will it take for property values to double?
    b. If you earn 10 percent on your investments, how long will it take for your money to double?
    c. At an annual interest rate of 5 percent, how long will it take for your savings to double?

Solution:
a. about 12 years (72/6)
b. about 7.2 years (72/10)
c. about 14.4 years (72/5)
LO: 1-2
Topic: Using the Rule of 72
LOD: Easy
Bloom tag: Application

3. *Determining the Inflation Rate.* In 2020, selected automobiles had an average cost of $16,000. The average cost of those same automobiles is now $24,000. What was the rate of increase for these automobiles between the two time periods?

Solution: ($24,000 – $16,000) / $16,000 = .50 (50 percent)
LO: 1-2
Topic: Determining the Inflation Rate
LOD: Medium
Bloom tag: Application

4. *Computing Future Living Expenses.* A family spends $52,000 a year for living expenses. If prices increase by 2 percent a year for the next three years, what amount will the family need for their living expenses after three years?

Solution: $55,182.82
LO: 1-2
Topic: Computing Future Living Expenses
LOD: Easy
Bloom tag: Application

5. *Calculating Earnings on Savings.* What would be the yearly earnings for a person with $8,000 in savings at an annual interest rate of 2.5 percent?

Solution: $8,000 ¿ .025 = $200
LO: 1-4
Topic: Calculating Earnings on Savings
LOD: Easy
Bloom tag: Application

6. *Computing the Time Value of Money.* Using a financial calculator or time value of money tables in the Chapter Appendix, calculate the following.
    a. The future value of $450 six years from now at 6 percent.
    b. The future value of $800 saved each year for 10 years at 8 percent.
    c. The amount a person would have to deposit today (present value) at a 6 percent interest rate to have $1,000 four years from now.
    d. The amount a person would have to deposit today to be able to take out $500 a year for 10 years from an account earning 7 percent.

Solution:
a. $638.33
b. $11,589,25
c. $792.09
d. $3,511.79
LO: 1-4
Topic: Computing the Time Value of Money
LOD: Medium
Bloom tag: Application

7. *Calculating the Future Value of a Series of Amounts.* Elaine Romberg prepares her own income tax return each year. A tax preparer would charge her $70 for this service. Over a period of 10 years, how much does Elaine gain from preparing her own tax return? Assume she can earn 3 percent on her savings.

Solution: $70 ¿ 11.464 = $802.47
LO: 1-4
Topic: Calculating the Future Value of a Series of Amounts
LOD: Difficult

Bloom tag: Application

8. *Calculating the Time Value of Money for Savings Goals.* If you desire to have $22,000 for a down payment for a house in five years, what amount would you need to deposit today? Assume that your money will earn 4 percent.

Solution: $18,082.40
LO: 1-4
Topic: Calculating the Time Value of Money for Savings Goals
LOD: Intermediate
Bloom tag: Application

9. *Calculating the Present Value of a Series.* Callen Patel is planning to go to graduate school in a program of study that will take three years. Callen Pete wants to have $15,000 available each year for various school and living expenses. If he earns 4 percent on his money, how much must be deposited at the start of his studies to be able to withdraw $15,000 a year for three years?

Solution: $41,626.37
LO: 1-4
Topic: Calculating the Present Value of a Series
LOD: Hard
Bloom tag: Application

10. *Using the Time Value of Money for Retirement Planning.* Carla Franz deposits $3,000 a year into her retirement account. If these funds have an average earning of 9 percent over the 40 years until her retirement, what will be the value of her retirement account?

Solution: $1,013,647.34
LO: 1-4
Topic: Using the Time Value of Money for Retirement Planning
LOD: Intermediate
Bloom tag: Application

11. *Calculating the Value of Reduced Spending.* If a person spends $15 a week on coffee (assume $750 a year), what would be the future value of that amount over 10 years if the funds were deposited in an account earning 3 percent?

Solution: $8,597.91
LO: 1-4
Topic: Calculating the Value of Reduced Spending
LOD: Easy
Bloom tag: Application

12. *Calculating the Present Value of Future Cash Flows.* A financial company advertises on television that they will pay you $60,000 now in exchange for annual payments of $10,000 that you are expected to receive for a legal settlement over the next 10 years. If you estimate the time value of money at 10 percent, would you accept this offer?

Solution:
(1) calculate the future value of the annual payment: $159,374.25
(2) calculate the present value of that future flow: $61,445.67
(3) the $60,000 being offered now is less than the present value of the future flow.
LO: 1-4
Topic: Calculating the Present Value of Future Cash Flows
LOD: Hard
Bloom tag: Application, analysis

13. *Calculating the Potential Future Value of Savings.* Mai Tran plans to set aside $2,800 a year for the next six years, earning 4 percent. What would be the future value of this savings amount?

Solution: $18,572.33
LO: 1-4
Topic: Calculating the Potential Future Value of Savings
LOD: Easy
Bloom tag: Application

14. *Determining a Loan Payment Amount.* If you borrow $8,000 with a 5 percent interest rate, to be repaid in five equal yearly payments, what would be the amount of each payment? (*Note:* Use an online calculator, app, financial calculator, or spreadsheet software.)

Solution: $8,000 / 4.329 = $1,847.80
LO: 1-4
Topic: Determining a Loan Payment Amount
LOD: Hard
Bloom tag: Application