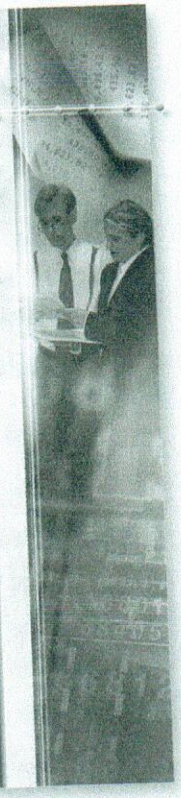
# CHAPTER 8 Study Guide and Assessment

## Living in the Real World

### A Picture-Perfect Loan



**Analyze the Story** As Chen found out, dreams do have a price tag attached. Depending on whether or not you're willing to save or get a loan, you'll need to contemplate the type of loan to take out.

**Negotiating to Arrive at a Decision** What are you willing to take out a loan for?

**a.** Create a list of expensive items that you might need a loan for in the future. Pick one to pursue.

**b.** Use the Internet to find out about your item's expense. Find out how much you'd need to spend in order to get it.

**c.** On a sheet of paper, estimate how long it might take if you took out a loan like Chen was looking at. (See Section 8-4 on page 294.)

**d.** Discuss with classmates if the item is worth taking out a loan and paying interest on over a number of years.

**e.** Put together a pro and con list after openly talking with your friends. Make a decision about purchasing the item in the future.

## After YOU READ

### REVIEW OF KEY WORDS

single-payment loan (p. 284)
promissory note (p. 284)
maturity value (p. 284)
term (p. 284)
ordinary interest (p. 284)
exact interest (p. 284)
installment loan (p. 287)
annual percentage rate (p. 290)
down payment (p. 287)
amount financed (p. 287)
simple interest installment loan (p. 290)
repayment schedule (p. 294)
final payment (p. 297)

**Determine if the following statements are true or false.**

1. A **loan** is money that you have borrowed and must repay.
2. A **single-payment loan** is a loan for which you pay a portion of the loan and a portion of the interest in several installments.
3. The total amount of money you repay is called the **maturity value.**
4. The **term** of the loan is the amount borrowed.
5. **Ordinary interest** is calculated by basing the time on a 365-day year.
6. The **down payment** is a portion of the cash
7. The formula for the **amount financed** is the cash price plus the exact interest.
8. For a **simple interest installment loan,** you usually repay the amount financed plus the finance charge in equal monthly payments.
9. The **annual percentage rate** is interest calculated by basing the time of the loan on a 31-day month.
10. A **repayment schedule** shows a plan to distribute interest and principal over the life of the loan.

# Skills and Concepts

## SECTION OBJECTIVE 8-1 AND EXAMPLES

**Compute the maturity value and interest rate of a single-payment loan.**

**Ricardo Lopez's bank granted him a single-payment loan of $3,500 for 80 days at 11 percent ordinary interest. What is the maturity value of the loan?**

**STEP 1:** Find the ordinary interest.

Principal × Rate × Time

$\$3{,}500 \times 11\% \times \frac{80}{360}$

= $85.56

**STEP 2:** Find the maturity value.

Principal + Interest Owed

$\$3{,}500 + \$85.56$

= **$3,585.56 maturity value**

### REVIEW EXERCISES

**11.** Dee Thomas obtained a single-payment loan of $21,400 to purchase a diamond necklace and bracelet set. She agreed to repay the loan in 120 days at an ordinary interest rate of 8.5 percent. What is the maturity value of her loan?

**12.** Bert Burruezo obtained a single-payment loan from University Bank for $6,000. He agreed to repay the loan in 60 days at an exact interest rate of 6 percent. What is the maturity value of his loan?

| | Principal | Interest Rates | | Term | Interest | Maturity Value |
|---|---|---|---|---|---|---|
| | | Ordinary | Exact | | | |
| **13.** | $1,540 | — | 5% | 60 | a. | b. |
| **14.** | 2,500 | 5% | — | 72 | a. | b. |

## SECTION OBJECTIVE 8-2 AND EXAMPLES

**Calculate the amount financed on an installment loan.**

**Theresa Traurig is buying a new copy machine for $635.88. She made a down payment of 15 percent and will finance the remainder. How much did Traurig finance?**

**STEP 1:** Find the down payment.

$\$635.88 \times 15\%$

= $95.38

**STEP 2:** Find the amount financed.

Cash Price − Down Payment

$\$635.88 - \$95.38$

= **$540.50 financed**

### REVIEW EXERCISES

**15.** Daleen Aragon purchased a DVD player and speaker system for her home. The total cost of her purchases was $587.33. Using the store's credit plan, she made a $147.00 down payment. What amount did she finance?

**16.** Levi Lemke wants to purchase a car costing $21,000. He will finance the car with an installment loan from the bank, but he would like to finance no more than $14,280. What percent of the total cost of the car should his down payment be?

**REVIEW EXERCISES** *(continued)*

| | Cash Price | Down Payment (Cash) | Down Payment (Percent) | Down Payment (in Dollars) | Amount Financed |
|---|---|---|---|---|---|
| 17. | $ 789 | $300 | — | a. | b. |
| 18. | 4,500 | — | 25% | a. | b. |

## SECTION OBJECTIVE 8-3 AND EXAMPLES

**Figure out the monthly payment, total amount repaid, and finance charge on an installment loan.**

**Andria Berger obtained an installment loan of $2,200 to purchase a fence for her home. The annual percentage rate is 10 percent. She must repay the loan in 24 months. What is the finance charge?**

**STEP 1:** Find the monthly payment. (Refer to the Monthly Payment on a Simple Interest Installment Loan of $100 table on page 799.)

$$\frac{\text{Amount of Loan}}{\$100} \times \text{Monthly Payment for a \$100 loan}$$

$$\frac{\$2{,}200.00}{\$100.00} \times \$4.61 = \$101.42$$

**STEP 2:** Find the total amount repaid.

$$\text{Number of Payments} \times \text{Monthly Payment}$$

$$24 \times \$101.42 = \$2{,}434.08$$

**STEP 3:** Find the finance charge.

$$\text{Total Amount Repaid} - \text{Amount Financed}$$

$$\$2{,}434.08 - \$2{,}200.00 = \textbf{\$234.08 finance charge}$$

**REVIEW EXERCISES**

**For these problems, you might need to refer to the Monthly Payment on a Simple Interest Installment Loan of $100 table on page 799.**

**19.** James Proctor obtained an installment loan of $3,500 to have some trees removed from his yard. The APR is 12 percent. The loan is to be repaid in 30 months. What is the finance charge?

**20.** Rick and Annette Evans purchased a new living room set at Allied Furniture Store for $2,896.00. They agreed to make a down payment of 20 percent and finance the remainder for 12 monthly payments. The APR is 8 percent. What is the finance charge?

| | APR | Term (Months) | Table Value | Amount Financed | Monthly Payment | Total Repaid | Finance Charge |
|---|---|---|---|---|---|---|---|
| 21. | 8% | 6 | a. | $1,500 | b. | c. | d. |
| 22. | 10% | 6 | a. | 2,300 | b. | c. | d. |

## SECTION OBJECTIVE 8-4 AND EXAMPLES

**Work out the payment to interest, payment to principal, and the new balance.**

**Jorge Ortega obtained a loan of $2,800.00 at 8 percent for 1 year. The monthly payment was $243.60. For the first payment, what is the interest? What is the payment to principal? What is the new principal?**

**STEP 1:** Find the interest.

Principal × Rate × Time

$2,800.00 × 8% × $\frac{1}{12}$ = **$18.67 interest**

**STEP 2:** Find the payment to principal.

Monthly Payment − Interest

$243.60 − $18.67 = **$224.93 payment to principal**

**STEP 3:** Find the new principal.

Previous Principal − Payment to Principal

$2,800.00 − $224.93 = **$2,575.07 new principal**

### REVIEW EXERCISES

| | Loan Balance | Interest Rate | Monthly Payment | Amount for Interest | Amount for Principal | New Principal |
|---|---|---|---|---|---|---|
| 23. | $3,900 | 12% | $303.55 | a. | b. | c. |
| 24. | 1,800 | 9% | 114.48 | a. | b. | c. |
| 25. | 1,300 | 8% | 105.43 | a. | b. | c. |
| 26. | 2,600 | 10% | 189.45 | a. | b. | c. |

**27.** Daniel Orrange obtained an installment loan of $8,500 at 14 percent for 42 months. The balance of the loan after 26 payments is $3,733.55. What is the interest for payment 27?

**28.** Bill Nanz obtained a loan for porch furniture. The loan is for $2,500 at 12.5 percent. The monthly payment is $118.23. What is the interest for the first payment? What is the payment to principal? What is the new principal?

## SECTION OBJECTIVE 8-5 AND EXAMPLES

**Compute the final payment when paying off a simple interest installment loan.**

**You have a 6-month loan of $1,000.00 at 10 percent with a balance of $338.89 after payment 4. What is the final payment if you pay off the loan with payment 5?**

**STEP 1:** Find the previous balance.

= $338.89

**STEP 2:** Find the interest for the fifth month.

Principal × Rate × Time

$\$338.89 \times 10\% \times \frac{1}{12} = \$2.82$

**STEP 3:** Find the final payment.

Previous Balance + Current Month's Interest

$\$338.89 + \$2.82 = \$341.71$ final payment

**REVIEW EXERCISES**

| | Interest Rate | Previous Balance | Interest | Final Payment |
|---|---|---|---|---|
| 29. | 10% | $3,600.00 | a. | b. |
| 30. | 8% | 2,400.00 | a. | b. |
| 31. | 12% | 4,860.80 | a. | b. |
| 32. | 6% | 2,984.50 | a. | b. |

## SECTION OBJECTIVE 8-6 AND EXAMPLES

**Use a table to find the annual percentage rate of a loan.**

**Paula Simms obtained an installment loan of $900.00 to purchase a digital camera to use at work. The finance charge is $13.14. She agreed to repay the loan in 6 months. What is the annual percentage rate?**

**STEP 1:** Find the finance charge per $100.

$$\$100 \times \frac{\text{Finance Charge}}{\text{Amount Financed}}$$

$$\$100 \times \frac{\$\ 13.14}{\$900.00}$$

$\$100 \times 0.0146 = \$1.46$

**STEP 2:** Find the APR. (Refer to the Annual Percentage Rate for Monthly Payment Plans table on pages 794–795.)

In the row for 6 payments, find the number closest to $1.46. It is $1.46. Read the APR at the top of the column. **APR is 5.00 percent.**

**REVIEW EXERCISES**

**For Problems 33–36, refer to the Annual Percentage Rate for Monthly Payment Plans table on pages 794–795.**

| | Finance Charge | Amount Financed | Finance Charge per $100 | Number of Payments | Annual Percentage Rate |
|---|---|---|---|---|---|
| 33. | $ 45.20 | $2,000 | a. | 6 | b. |
| 34. | 84.24 | 3,600 | a. | 12 | b. |
| 35. | 160.00 | 2,500 | a. | 18 | b. |
| 36. | 81.00 | 4,500 | a. | 18 | b. |