CHAPTER 7

Charge Accounts and Credit Cards

Before YOU READ

What You'll Learn

Section 7-1 Calculate the new balance on a charge account.

Section 7-2 Find the finance charge by using the unpaid-balance method.

Section 7-3 Calculate the finance charge based on the average-daily-balance method where no new purchases are included.

Section 7-4 Compute the finance charge based on the average-daily-balance method where new purchases are included.

### When Will You Ever Use This?

Credit is an agreement to get money, goods, or services now in exchange for a promise to pay in the future. When you buy on credit, you're delaying the payment for the purchase. You might use credit cards to purchase clothes, airline tickets, or other big-ticket items.

Key Words to Know

- credit card
- charge account
- finance charge
- unpaid-balance method
- average-daily-balance method
- account statement

Mathematics Online

To learn more about charge accounts and credit cards, visit **busmath.glencoe.com**.

◀ **CONTENTS** ▶
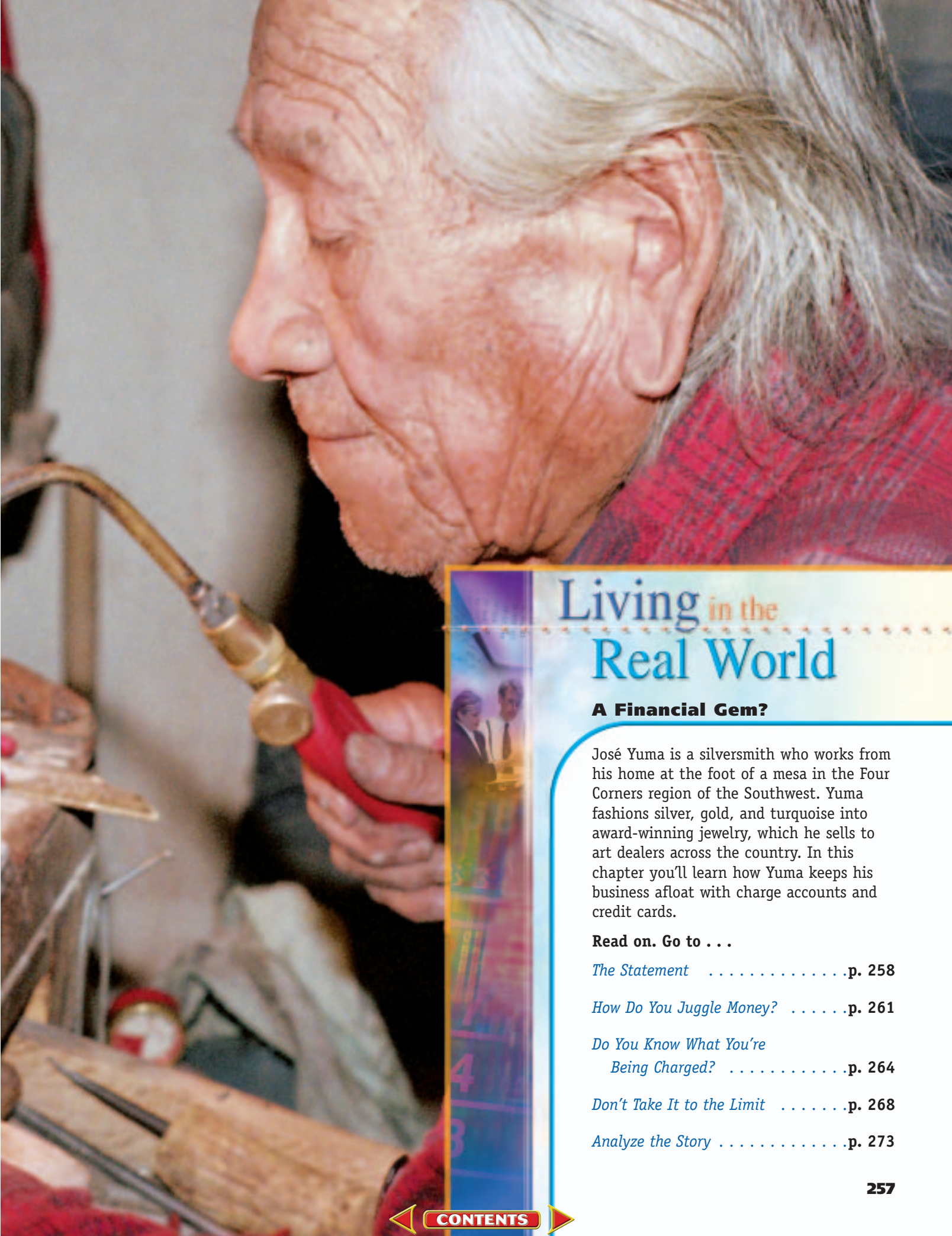
Living in the Real World

A Financial Gem?

José Yuma is a silversmith who works from his home at the foot of a mesa in the Four Corners region of the Southwest. Yuma fashions silver, gold, and turquoise into award-winning jewelry, which he sells to art dealers across the country. In this chapter you'll learn how Yuma keeps his business afloat with charge accounts and credit cards.

Read on. Go to . . .

SECTION 7-1 Account Statements

With a **credit card** or a **charge account**, you receive a monthly **account statement,** which lists all the items you purchased during a one-month period. A credit card allows the cardholder to purchase goods and services on demand. A charge account is an existing line of credit, often at a particular business. If your previous bill was not paid in full, then the credit card or charge account company adds on a **finance charge**. A finance charge is interest that is charged for delaying payment. The formula you'll need to remember for this is:

$$\text{New Balance} = \text{Previous Balance} + \text{Finance Charge} + \text{New Purchases} - (\text{Payments} + \text{Credits})$$

▶ **FYI**

Although the Federal Reserve Bank estimates that 60 percent of payments are made with checks, credit cards account for more than 12 billion transactions a year.
▶▶▶

Living in the Real World

A Financial Gem?

The Statement   Yuma is self-employed, so he must keep careful records of what he spends and earns. Today he receives the monthly statement from his credit card company. Since several valuable pieces of his jewelry didn't sell quickly last month, he doesn't have enough money to pay for some of the materials he ordered.

Draw Conclusions   What are the disadvantages of using credit cards?

Example 1

Martha Palmer received this charge account statement on October 2 (see Figure 7.1). What is her new balance?

STEP: Find the new balance.

$$\text{Previous Balance} + \text{Finance Charge} + \text{New Purchases} - (\text{Payments} + \text{Credits})$$

$$\$332.64 + \$5.64 + \$173.03 - (\$50.00 + \$31.94)$$
$$= \$511.31 - \$81.94$$
$$= \$429.37 \text{ new balance}$$

332.64 **+** 5.64 **+** 173.03 **M+** 50.00 **M−** 31.94 **M−**

RM **=** 429.37

◀ CONTENTS ▶

Figure 7.1

D&L Department Store

PALMER'S ACCOUNT NUMBER

Martha Palmer
1234 Main St.
Toledo, OH 43605

❐ (IF ADDRESS IS INCORRECT,
PLEASE CHECK BOX AND
CORRECT ON REVERSE SIDE)

ACCOUNT NUMBER
NEW BALANCE
TOTAL MINIMUM AMOUNT NOW DUE
SEND PAYMENT TO REACH US BY

101-04076

$43.00
10/30/--

DATE	DEPT. NO.	DESCRIPTION	PURCHASES	CREDITS	PAYMENTS	ITEM NO.
09/07	162	SPORTSWEAR		$23.42		0-06-18005
09/10	363	SPORTSWEAR	$108.63			0-07-20015
09/17		PAYMENT—THANK YOU			$50.00	0-06-47023
09/19	214	JR SPORTSWEAR		8.52		0-07-45005
09/19	53	HOUSEWARES	19.53		$50.00	0-07-45006
09/27	34	COSMETICS	25.62	CREDIT FOR ITEMS RETURNED	PAYMENT TOWARD LAST MONTH'S BILL	0-07-64004
09/29	1	LINENS-TOWELS	19.25			0-07-70012

LAST DATE TRANSACTIONS WERE PROCESSED

Bill Closing Date	Previous Balance	Finance Charge	Total Purchases This Month	Credits	Payment	New Balance
9/30	$332.64	$5.64	$173.03	$31.94	$50.00	$429.37

AMOUNT PALMER OWED LAST MONTH

Pay new balance in full within 25 days of bill closing date to avoid finance charge next month. Finance charge, if any, is computed on the average daily balance of $375.72 by applying monthly periodic rates. SUBJECT TO A MINIMUM FINANCE CHARGE OF $.50. **NOTICE:** SEE REVERSE SIDE FOR IMPORTANT INFORMATION.

AMOUNT PALMER NOW OWES

CONCEPT CHECK

Complete the problems, then check your answers at the end of the chapter.
Find the new balance.

Previous Balance	+	Finance Charge	+	New Purchases	−	(Payments + Credits)	=	New Balance
1. $600.00	+	$7.50	+	$90.00	−	$100.00	=	
2. 278.75	+	4.18	+	35.85	−	48.00	=	

Example 2

Dante Green's charge account statement showed a previous balance of $157.80, a finance charge of $2.76, new purchases of $86.50 and $48.50, a payment of $40.00, and a credit of $37.85. What is the new balance?

STEP: Find the new balance.

$$\underset{\text{Balance}}{\text{Previous}} + \underset{\text{Charge}}{\text{Finance}} + \underset{\text{Purchases}}{\text{New}} - (\text{Payments} + \text{Credits})$$

$$\$157.80 + \$2.76 + (\$86.50 + \$48.50) - (\$40.00 + \$37.85)$$
$$= \qquad \$295.56 \qquad\qquad - \qquad \$77.85$$
$$= \$217.71 \text{ new balance}$$

CONCEPT CHECK

Complete the problems, then check your answers at the end of the chapter.

3. Rolo Stein's charge account statement showed a previous balance of $658.94, a finance charge of $10.71, new purchases of $54.21, $36.28, and $98.56, a credit of $145.81 and a $100.00 payment. What is the new balance?

4. Naomi Folsum's charge account statement showed a previous balance of $1,865.23, a finance charge of $16.79, new purchases of $132.26, $142.39, and $12.56, a credit of $32.21 and a $160.00 payment. What is the new balance?

CONTENTS

What is the new balance for the credit statements shown?

	Billing Date	Previous Balance	Finance Charge	New Purchases	Payments & Credits	New Balance
5.	08/15/20--	$ 600.00	$ 9.00	$140.00	$100.00	
6.	01/22/20--	410.75	7.20	175.00	150.00	
7.	03/01/20--	450.95	6.75	39.95	160.00	
8.	09/04/20--	233.23	2.33	40.36	133.23	
9.	06/15/20--	675.19	—	416.34	675.19	
10.	08/01/20--	2,494.21	43.65	137.25	450.00	

11. Yukiko Naito's monthly credit card statement has a previous balance of $307.85. Naito made a payment of $40.00. This month's new purchases include the following charges: $9.50 and $41.75. The finance charge is $4.62. What is the new balance?

12. Bob Ross has a charge card. Ross's previous monthly balance is $144.79. He made a payment of $144.79. There is no finance charge. This month Ross has no new purchases. What is the new balance?

13. Andre Moore's charge card account has a previous balance of $787.29. Moore made a $100 payment. The new purchases include $47.97 and $49.28, with a finance charge of $11.81. What is the new balance?

14. Jane Cook has a monthly statement for her credit card. The previous balance is $529.78. Cook paid $85. This month's new purchases include $277.32 and $38.20, as well as a finance charge of $7.95. What is the new balance?

15. Marco Cassius received this charge account statement. Find his payments and credits, new purchases, and new balance.

Figure 7.2

Dept.	Description	Charges	Payment/ Credit	Date	Ref. #
109	Garden Shop	$ 42.75		1/25	6004
85	Menswear	145.98		1/25	7018
	PAYMENT		$74.40	2/01	8014
71	Appliances		35.50	2/02	3113
Billing Date: 2/16					

Previous Balance	Payments & Credits	Unpaid Balance	Finance Charge	New Purchases	New Balance
$285.92	a.	—	$4.29	b.	c.

Need Help? Go to...

► **Skill 5: Adding Decimals,** page 732

► **Skill 6: Subtracting Decimals,** page 733

Add.

16. $532.75 + $45.90 + $38.90 + $16.55   **17.** $44.29 + $324.60 + $8.65 + $27.50

Subtract.

18. $41.50 − $9.50   **19.** $321.65 − $12.35   **20.** $427.16 − $45.12

SECTION (7-2) Finance Charge: Unpaid-Balance Method

Some companies use the **unpaid-balance method** to compute finance charges. This is when the finance charge is computed based on the portion of the previous balance you have not paid. The formula is:

Unpaid Balance = Previous Balance − (Payments + Credits)

Finance Charge = Unpaid Balance × Periodic Rate

New Balance = Unpaid Balance + Finance Charge + New Purchases

Living in the Real World

A Financial Gem?

How Do You Juggle Money? Yuma visits his cousin Kimi, the vice president at the local bank. He explains that he needs to continually buy materials to keep producing a steady supply of jewelry. Yet some months, especially when he creates particularly expensive pieces, it might take a while to sell his work. That means that occasionally he can't cover his business expenses completely.

Draw Conclusions Suppose his monthly invoice listed a balance of $1,220, but he only paid $900. Yuma would still owe $320. If the finance charge for an unpaid balance is 1.9 percent annual interest rate, what is the new balance?

Example 1

A portion of Lucille Sherman's charge account statement is shown. The monthly finance charge is 1.5 percent of the unpaid balance. What is the new account balance?

Figure 7.3

Charge Account Statement					
88	PAYMENT / Thank You	40.00			
Billing Date: 2/16					
Previous Balance	Payments & Credits	Unpaid Balance	Finance Charge	New Purchases	New Balance
$132.40	$40.00			$79.55	

STEP 1: Find the unpaid balance.
Previous Balance − (Payments + Credits)
$132.40 − $40.00 = $92.40

STEP 2: Find the finance charge.
Unpaid Balance × Periodic Rate
$92.40 × 1.5% = $1.386 or $1.39

STEP 3: Find the new balance.
Unpaid Balance + Finance Charge + New Purchases
$92.40 + $1.39 + $79.55
= **$173.34 new balance**

CONCEPT CHECK

SELF-CHECK

Complete the problems, then check your answers at the end of the chapter. Find the unpaid balance, the finance charge, and the new balance. (The periodic rate is 1.5 percent.)

	(Previous Balance	− Payments + Credits	= Unpaid Balance)	+ Finance Charge	+ New Purchases	= New Balance
1.	$600	$100	a.	b.	$70	c.
2.	220	150	a.	b.	95	c.

Example 2

Alejandro Martinez has a charge account at Diamond Jewelers, which uses the unpaid-balance method of computing finance charges. The periodic rate is 1.85 percent. If Martinez's previous balance is $478.68 and he had payments and credits of $250.00, find his unpaid balance and finance charge. If he has new purchases of $38.50, find his new balance.

STEP 1: Find the unpaid balance.
Previous Balance − (Payments + Credits)
$478.68 − $250.00 = $228.68

STEP 2: Find the finance charge.
Unpaid Balance × Periodic Rate
$228.68 × 1.85% = $4.23058 = $4.23

STEP 3: Find the new balance.
Unpaid Balance + Finance Charge + New Purchases
$228.68 + $4.23 + $38.50
= **271.41 new balance**

CONCEPT CHECK

SELF-CHECK

Complete the problems, then check your answers at the end of the chapter. The periodic rate is 1.5 percent. Find the unpaid balance, the finance charge, and the new balance.

3. Previous balance of $980.00.
Credit of $120.00.
Payment of $150.
New purchases: $32.00 and $40.00.

4. Previous balance of $654.50.
Credit of $85.50.
Payment of $120.
New purchases: $32.50 and $54.50.

For Problems 5–12, use a periodic rate of 1.5 percent and the unpaid-balance method to compute the finance charge.

(Previous Balance	−	Payments & Credits	=	Unpaid Balance)	+	Finance Charge	+	New Purchases	=	New Balance
5. ($500.00	−	$100.00	=	a.)	+	b.	+	$ 80.00	=	c.
6. (300.00	−	150.00	=	a.)	+	b.	+	45.00	=	c.
7. (350.00	−	75.00	=	a.)	+	b.	+	90.00	=	c.
8. (125.50	−	45.50	=	a.)	+	b.	+	42.50	=	c.
9. (437.50	−	57.50	=	a.)	+	b.	+	222.50	=	c.
10. (173.43	−	100.00	=	a.)	+	b.	+	127.91	=	c.
11. (491.87	−	119.00	=	a.)	+	b.	+	147.94	=	c.
12. (738.27	−	145.00	=	a.)	+	b.	+	199.95	=	c.

Find the new balance.

13. Midge Duez's account statement.
Previous balance of $1,280.00.
Payment of $200.00.
New purchases: $52.00 and $48.00.
Periodic rate is 1.6 percent.

14. Liz Cole's account statement.
Previous balance of $1,221.35.
Payment of $300.00.
New purchases: $25.90 and $18.53.
Periodic rate is 1.75 percent.

15. Hideo Nagata's account statement.
Previous balance of $948.00.
Credit of $100.00.
Payment of $200.00.
New purchases: $72.00 and $88.00.
Periodic rate is 1.5 percent.

16. Wyndolyn Brown's account statement
Previous balance of $419.70.
Credit of $23.35.
Payment of $200.00.
New purchases: $49.90 and $32.48.
Periodic rate is 1.25 percent.

17. A portion of Alvin Sujkowski's charge account statement is shown. The finance charge is 2 percent of the unpaid balance. What is the new balance?

Previous Balance	Payments & Credits	Unpaid Balance	Finance Charge	New Purchases	New Balance
$419.29	$45.00			$79.31	

18. A portion of Verda Buell's charge account statement is shown. The finance charge is 1.25 percent of the unpaid balance. What is the new balance?

Previous Balance	Payments & Credits	Unpaid Balance	Finance Charge	New Purchases	New Balance
$556.71	$147.55			$21.64	

MAINTAINING YOUR SKILLS

Add.

19. $425.10 + $38.75 + $29.51 + $4.22   **20.** $5.95 + $38.75 + $71.19 + $314.75

Subtract.

21. $499.24 − $88.31   **22.** $391.37 − $79.43   **23.** $523.89 − $154.79

Find the percentage. Round answers to the nearest hundredth.

24. 4% of 220   **25.** 8% of 60   **26.** 3.9% of 500

Section
Objective

Calculate the finance charge based on the average-daily-balance method where no new purchases are included.

SECTION (7-3) Finance Charge: Average-Daily-Balance Method (No New Purchases Included)

Many companies calculate the finance charge using the **average-daily-balance method** where *no new purchases* are included. The average daily balance is the average of the account balance at the end of each day of the billing period. For this method of computing finance charges, new purchases posted during the billing period are not included when figuring the balance at the end of the day. Calculating it looks like this:

$$\text{Average Daily Balance} = \frac{\text{Sum of Daily Balances}}{\text{Number of Days}}$$

If you need to calculate the finance charge, multiply the average daily balance by the periodic rate. Remember that:

$$\text{Finance Charge} = \text{Average Daily Balance} \times \text{Periodic Rate}$$

$$\text{New Balance} = \text{Unpaid Balance} + \text{Finance Charge} + \text{New Purchases}$$

Living in the Real World

A Financial Gem?

Do You Know What You're Being Charged? Credit card companies have more than one way of calculating finance charges. Kimi explains that his credit card company uses one particular method to figure his balance including a finance charge.

Draw Conclusions In your own words, what do you suppose a finance charge calculated on your average daily balance (with *no* new purchases included) means?

Example 1

A portion of Dewey Napp's credit card statement is shown in Figure 7.4 on page 265.

A finance charge was added to Napp's account balance because he did not pay his last bill in full. The finance charge was computed using the average daily balance where new purchases were not included. Only the payment of $44.85 affected the average daily balance. What is the average daily balance?

Figure 7.4

Reference	Posting Date	Transaction Date	Description	Purchases & Advances	Payments & Credits
131809	9/05	8/24	Health Club	$48.75	
265118	9/18		PAYMENT		$44.85
407372	9/20	9/01	Wilson's	37.85	
329416	10/01	8/30	Ed's Discount	20.99	

Billing Period	Previous Balance	Periodic Rate	Average Daily Balance	Finance Charge
9/4–10/3	$194.85	2%	$170.93	$3.42

Payments & Credits	Purchases & Advances	New Balance	Minimum Payment	Payment Due
$44.85	$107.59	$261.01	$20.00	10/25

STEP 1: Find the sum of daily balances.

Dates	Payment	End-of-Day Balance	×	Number of Days	Sum of Balances
9/4–9/17		$194.85	×	14	$2,727.90
9/18	$44.85	150.00	×	1	150.00
9/19–10/3		150.00	×	15	2,250.00
			TOTAL	30	$5,127.90

STEP 2: Find the average daily balance.

Sum of Daily Balances ÷ Number of Days

$5,127.90 ÷ 30 = **$170.93 average daily balance**

194.85 ⊠ 14 ▣ 2727.9 M+ 194.85 ▬ 44.85 ▣ 150
M+ 150 ⊠ 15 ▣ 2250 M+ RM 5127.9 ÷ 30 ▣ 170.93

CONCEPT CHECK

Complete the problems, then check your answers at the end of the chapter. Find the average daily balance where no new purchases are included.

	Dates	Payment	End-of-Day Balance	×	Number of Days	Sum of Balances
1.	9/9–9/18		$500	×	10	a.
2.	9/19	$100	400	×	1	a.
3.	9/20–10/8		a.	×	b.	c.
4.			TOTAL		a.	b.
	Sum of Daily Balances ÷		Number of Days		= Average Daily Balance	
5.	a.		÷ b.		= c.	

Example 2

Dewey Napp (from Example 1) checks the finance charge and the new balance. The finance charge is 2 percent of the average daily balance. What is the new balance?

STEP 1: Find the unpaid balance.
Previous Balance − (Payments + Credits)
$194.85 − $44.85 = $150.00

STEP 2: Find the finance charge.
Average Daily Balance × Periodic Rate
$170.93 × 2% = $3.418 or $3.42

STEP 3: Find the new purchases.
$48.75 + $37.85 + $20.99 = $107.59

STEP 4: Find the new balance.
Unpaid Balance + Finance Charge + New Purchases
$150.00 + $3.42 + $107.59
= **$261.01 new balance**

CONCEPT CHECK

SELF-CHECK

Complete the problems, then check your answers at the end of the chapter. The finance charge is 1.5 percent of the average daily balance.

Previous Balance	Purchases & Advances	Payments & Credits	Average Daily Balance	Finance Charge	New Balance
$180.00	$40.00	$30.00	$165.00		

6. Find the finance charge.

7. Find the new balance.

SECTION 7-3 PRACTICE

For Problems 8 and 9, fill in the table.

8.

Billing Periods	Payment	End-of-Day Balance	Number of Days	Sum of Balance	
6/01–6/15		$75.00	15	$1,125.00	**d.** What is the average daily balance?
6/16	$50.00	25.00	1	25.00	
6/17–6/30		25.00	14	**a.**	
		TOTAL	**b.**	**c.**	

9.

Billing Periods	Payment	End-of-Day Balance	Number of Days	Sum of Balance	
7/15–8/2		$400.00	**a.**	**b.**	**i.** What is the average daily balance?
8/3	$100.00	300.00	**c.**	**d.**	
8/4–8/14		300.00	**e.**	**f.**	
		TOTAL	**g.**	**h.**	

◀ **CONTENTS** ▶

The finance charge is computed using the average-daily-balance method where no new purchases are included. Find the finance charge and the new balance for the following statements.

10.

Billing Period	Previous Balance	Periodic Rate	Average Daily Balance	Finance Charge
2/3–3/2	$196	2%	$156	a.

Payments & Credits	Purchases & Advances	New Balance	Minimum Payment	Payment Due
$60	0	b.	$15	3/20

11. A portion of Theo Clark's credit card account statement for March is shown. The finance charge is computed using the average-daily-balance method where new purchases are excluded. Find the average daily balance, the finance charge, and the new balance.

Figure 7.5

Reference	Posting Date	Transaction Date	Description	Purchases & Advances	Payments & Credits
450345	3/20		PAYMENT		$24.66
458343	3/27	3/14	Oil Co.	$81.30	

Billing Period	Previous Balance	Periodic Rate	Average Daily Balance	Finance Charge
3/4–4/3	$94.66	2%	a.	b.

Payments & Credits	Purchases & Advances	New Balance	Minimum Payment	Payment Due
$24.66	$81.30	c.	$10.00	4/21

12. Edith Bertelli received this statement from a department store. Find the average daily balance, the finance charge, and the new balance.

Figure 7.6

Reference	Posting Date	Transaction Date	Description	Purchases & Advances	Payments & Credits
1027485	4/11		PAYMENT		$40.00
4500298	4/15	4/1	Menswear	$39.95	
5473390	4/23	4/21	Housewares	15.99	
1376455	4/25		PAYMENT		50.00

Billing Period	Previous Balance	Periodic Rate	Average Daily Balance	Finance Charge
4/1–5/1	$175.00	1.2%	a.	b.

Payments & Credits	Purchases & Advances	New Balance	Minimum Payment	Payment Due
$90.00	$55.94	c.	$25.00	5/25

MAINTAINING YOUR SKILLS

Multiply.

13. 12×200 **14.** 18×150 **15.** 22×37.5

Divide. Calculate answers to the nearest hundredth.

16. $3,750 \div 30$ **17.** $3,360 \div 28$ **18.** $1,129.95 \div 31$

Find the average.

19. 44, 73, 92, 88, 63   **20.** 324, 406, 958, 285, 785, 374

CONTENTS

Section
Objective

Compute the finance charge based on the average-daily-balance method where new purchases are included.

SECTION 7-4 Finance Charge: Average-Daily-Balance Method (New Purchases Included)

Some companies compute the finance charge using the average-daily-balance method where *new purchases are included* when figuring the daily balances during the billing period. Remember that:

$$\text{Average Daily Balance} = \frac{\textbf{Sum of Daily Balances}}{\textbf{Number of Days}}$$

Then you'll need to figure out the finance charge and the new balance. The finance charge is calculated by multiplying the average daily balance times the periodic rate. The new balance is comprised of an unpaid balance, a finance charge, and any new purchases. To do this, follow these formulas:

$$\textbf{Finance Charge} = \textbf{Average Daily Balance} \times \textbf{Periodic Rate}$$

$$\textbf{New Balance} = \textbf{Unpaid Balance} + \textbf{Finance Charge} + \textbf{New Purchases}$$

Living in the Real World

A Financial Gem?

Don't Take It to the Limit In case Yuma ever wants to get a different credit card, Kimi mentions he should remember to check if it calculates a finance charge based on your average daily balance (with *new* purchases included).

Draw Conclusions If you had a choice between paying a finance charge based on your average daily balance with or without new purchases, which one would you pick, and why?

Example 1

Aiesha Miller has a charge account where the finance charge is computed using the average-daily-balance method that includes new purchases. She checks to be sure the average daily balance is correct.

Figure 7.7

Reference	Posting Date	Transaction Date	Description	Purchases & Advances	Payments & Credits
1-32734	12/10	12/8	Housewares	$25.85	
2-44998	12/20		PAYMENT		$70.00

Billing Period	Previous Balance	Periodic Rate	Average Daily Balance	Finance Charge
12/1–12/31	$125.80	2%	$117.05	$2.34

Payments & Credits	Purchases & Advances	New Balance	Minimum Payment	Payment Due
$70.00	$25.85	$83.99	$20.00	1/21

STEP 1: Find the sum of daily balances.

Dates	Payment	Purchases	End-of-Day Balance	×	Number of Days	Sum of Balances
12/1–12/9			$125.80	×	9	$1,132.20
12/10		$25.85	151.65	×	1	151.65
12/11–12/19			151.65	×	9	1,364.85
12/20	$70.00		81.65	×	1	81.65
12/21–12/31			81.65	×	11	898.15
			TOTAL		31	**$3,628.50**

STEP 2: Find the average daily balance.
Sum of Daily Balances ÷ Number of Days
$3,628.50 ÷ 31
= $117.048 or $117.05 average daily balance

125.8 ⊠ 9 = 1132.2 [M+] 125.8 [+] 25.85 =

151.65 [M+] ⊠ 9 = 1364.85 [M+] 151.65 [−]

70 = 81.65 [M+] ⊠ 11 = 898.15 [M+] [RM]

3628.5 [÷] 31 = 117.048

SELF-CHECK ✓

Complete the problems, then check your answers at the end of the chapter.
Find the average daily balance, with new purchases included.

	Dates	Payment	Purchase	End-of-Day Balance	×	Number of Days	Sum of Balances
1.	9/9–9/15			$500	×	7	a.
2.	9/16		$100	600	×	1	a.
3.	9/17–9/21			a.	×	5	b.
4.	9/22	$150		a.	× b.		c.
5.	9/23–10/8			a.	× b.		c.
6.				TOTAL	a.		b.

Sum of Daily Balances ÷		Number of Days	= Average Daily Balance
7. a.	÷ b.		= c.

(Example 2)

Aiesha Miller (from Example 1) checks the finance charge and the new balance. The finance charge is 2 percent of the average daily balance. What is the new balance?

STEP 1: Find the unpaid balance.
Previous Balance − (Payments + Credits)
$125.80 − $70.00 = $55.80

STEP 2: Find the finance charge.
Average Daily Balance × Periodic Rate
$117.05 × 2% = $2.3418 or $2.34

STEP 3: Find the new purchases.
$25.85 new purchases

STEP 4: Find the new balance.
Unpaid Balance + Finance Charge + New Purchases
$55.80 + $2.34 + $25.85
= **$83.99 new balance**

SELF-CHECK ✓

Complete the problems, then check your answers at the end of the chapter.

Use the information in Self-Check Problems 1–7 to find the following if the finance charge is 1.5 percent of the average daily balance.

8. The unpaid balance.

9. The finance charge.

10. The new balance.

◀ CONTENTS ▶

Find the average daily balance, with new purchases included.

	Dates	Payment	Purchase	End-of-Day Balance	×	Number of Days	Sum of Balances
11.	9/6–9/17			$600	×	a.	b.
12.	9/18		$140	740	×	a.	b.
13.	9/19–9/24			a.	×	b.	c.
14.	9/25	$120		a.	×	b.	c.
15.	9/26–10/5			a.	×	b.	c.
16.				**TOTAL**		a.	b.

	Sum of Daily Balances	÷	Number of Days		= Average Daily Balance
17.	a.	÷	b.	=	c.

18. Edith Bertelli received this statement from a department store. Find the average daily balance with new purchases including the finance charge and the new balance.

Figure 7.8

Reference	Posting Date	Transaction Date	Description	Purchases & Advances	Payments & Credits
1027485	4/11		PAYMENT		$40.00
4500298	4/15	4/01	Menswear	$39.95	
5473390	4/23	4/21	Housewares	15.99	
1374655	4/25		PAYMENT		50.00

Billing Period	Previous Balance	Periodic Rate	Average Daily Balance	Finance Charge
4/1–5/1	$175.00	1.2%	a.	b.

Payments & Credits	Purchases & Advances	New Balance	Minimum Payment	Payment Due
$90.00	$55.94	c.	$25.00	5/25

MAINTAINING YOUR SKILLS

Multiply.

19. 7×145　　　**20.** 5×360　　　**21.** 31×56.23

Divide. Round answers to the nearest hundredth.

22. $1,608.75 \div 30$　　　**23.** $1,329.89 \div 31$　　　**24.** $1,029 \div 28$

Find the average. Round answers to the nearest hundredth.

25. 36, 45, 58, 62, 48　　　　**26.** 456.2, 364.8, 471.5, 392.18

◀ **CONTENTS** ▶

Self-Check Answers

CONCEPT CHECK (p. 259)

1. **$597.50**
2. **$270.78**
3. $658.94 + $10.71 + $54.21 + $36.28 + $98.56 − ($100.00 + $145.81) = $858.78 − $245.81 = **$612.89**
4. $1,856.23 + $16.79 + $132.26 + $142.39 + $12.56 − ($160.00 + $32.21) = $2,169.23 − $192.21 = **$1,977.02**

CONCEPT CHECK (p. 262)

1. **a.** Unpaid Balance = $600.00 − $100.00 = **$500.00**
   b. Finance Charge = 1.5% × $500.00 = **$7.50**
   c. New Balance = $500.00 + $7.50 + $70.00 = **$577.50**
2. **a.** Unpaid Balance = $220.00 − $150.00 = **$70.00**
   b. Finance Charge = 1.5% × $70.00 = **$1.05**
   c. New Balance = $70.00 + $1.05 + $95.00 = **$166.05**
3. Unpaid Balance = $980.00 − ($120.00 + $150.00) = **$710.00**
   Finance Charge = 1.5% × $710.00 = **$10.65**
   New Balance = $710.00 + $10.65 + $72.00 = **$792.65**
4. Unpaid Balance = $654.50 − $205.50 = **$449.00**
   Finance Charge = 1.5% × $449.00 = **$6.74**
   New Balance = $449.00 + $6.74 + $87.00 = **$542.74**

CONCEPT CHECK (p. 265, 266)

1. **a.** $5,000
2. **a.** $400
3. **a.** $400   **b.** 19   **c.** $7,600
4. **a.** 30   **b.** $13,000
5. **a.** $13,000.00   **b.** 30   **c.** $433.33
6. $165.00 × 0.015 = **$2.48**
7. $180.00 + $40.00 − $30.00 + $2.48 = **$192.48**

CONCEPT CHECK (p. 270)

1. **a.** $3,500
2. **a.** $600
3. **a.** $600   **b.** $3,000
4. **a.** $450   **b.** 1   **c.** $450
5. **a.** $450   **b.** 16   **c.** $7,200
6. **a.** 30   **b.** $14,750
7. **a.** $14,750.00   **b.** 30   **c.** $491.67
8. Unpaid Balance = $500.00 − $150.00 = **$350.00**
9. Finance Charge = 1.5% × $491.67 = **$7.38**
10. New Balance = $350.00 + $7.38 + $100.00 = **$457.38**

Living in the Real World

A Financial Gem?

Analyze the Story Perhaps Yuma thinks using a credit card is the way to go when he is tight on cash. Charge it and the worries go away, right? Wrong. It only adds up and can lead to serious financial problems for years (or even decades).

❶ Reasoning. If Yuma maintains a high daily balance on his credit card, would it be better for him to find a company that calculates the finance charge based on the unpaid balance?

❷ Choosing a Method. Yuma's credit card company uses a finance charge of 1.2 percent for an unpaid balance. Complete the credit card statement on your own piece of paper. **(Note: Minimum payment is 12 percent of the previous balance.)**

❸ Decision Making. The best thing to do is pay off your credit card statement at the end of each month. Yuma just sold several of his best pieces of jewelry to the Native American arts museum. What should Yuma do with the money when he receives it?

Reference	Posting Date	Transaction Date	Description	Purchases & Advances	Payments & Credits
3727485	4/11		PAYMENT		$900.00
4565298	4/15	4/01	Metal	$250.95	
5473445	4/23	4/21	Stones	198.42	
3566455	4/25	4/23	Clips	55.74	

Billing Period	Previous Balance	Periodic Rate	Average Daily Balance	Finance Charge
4/1–5/1	$320.00	1.2%		

Payments & Credits	Purchases & Advances	New Balance	Minimum Payment	Payment Due
$900.00				5/25

After YOU READ

REVIEW OF KEY WORDS

account statement (p. 258)
charge account (p. 258)

finance charge (p. 258)
credit card (p. 258)

unpaid-balance method (p. 261)
average-daily-balance method (p. 264)

Match one of the key words above with a definition below.

1. a way of computing finance charges where the average of the charge account balance is averaged at the end of each day in the billing period.

2. a document you receive with a monthly listing of all transactions processed by the closing date of that month.

3. allows the holder to buy things on demand by presenting it.

4. a line of credit, often at a particular business.

5. the interest charged on the amount you owe.

CONTENTS

Skills and Concepts

SECTION OBJECTIVE 7-1 AND EXAMPLES

Calculate the new balance in a charge account.

Your monthly statement has a previous balance of $504.33, with a payment of $50.00, new purchases of $12.35 and $39.54, and a finance charge of $5.67. What is the new balance?

STEP: Find the new balance.

Previous Balance + Finance Charge + New Purchases − (Payments + Credits)

$504.33 + $5.67 + $12.35 + $39.54 − $50.00 = **$511.89**

REVIEW EXERCISES

What is the new balance for the credit card statements shown?

	Billing Date	Previous Balance	Finance Charge	New Purchases	Payments & Credits	New Balance
6.	9/27/--	$ 306.55	$ 6.75	$ 209.54	$175.00	
7.	6/29/--	985.66	9.06	1,239.44	300.00	
8.	5/25/--	121.09	2.35	219.30	53.00	
9.	6/15/--	1,239.92	18.56	500.00	895.00	

SECTION OBJECTIVE 7-2 AND EXAMPLES

Find the finance charge by using the unpaid-balance method.

Aldo Vazquez has a charge account at Robert's Bike Shop, which uses the unpaid-balance method of computing finance charges. The periodic rate is 1.25 percent. If Vazquez's previous balance was $569.32 and he had payments and credits of $150.00, find his unpaid balance and finance charges. He had new purchases of $97.50. Find his new balance.

STEP 1: Find the unpaid balance.

Previous Balance − (Payments + Credits)

$569.32 − $150.00 = $419.32

STEP 2: Find the finance charge.

Unpaid Balance × Periodic Rate

$419.32 × 1.25% = $5.2415 or $5.24

STEP 3: Find the new balance.

Unpaid Balance + Finance Charge + New Purchases

$419.32 + $5.24 + $97.50 = **$522.06 new balance**

◄ CONTENTS ►

REVIEW EXERCISES

10. Denise Shelby's account statement. Unpaid balance of $210.94. Periodic rate of 1.85 percent. What is the finance charge? New purchases of $341.22. What is the new balance?

11. Fredericka Smith's account statement. Unpaid balance of $75.06. Periodic rate of 2 percent. What is the finance charge? New purchases of $432.11. What is the new balance?

Use a periodic rate of 1.25 percent and the unpaid-balance method of computing the finance charge for Problems 12 and 13.

	Previous Balance	Payments & Credits	Unpaid Balance	Finance Charge	New Purchases	New Balance
12.	$400.00	$200.00	a.	b.	$300.00	c.
13.	654.99	300.00	a.	b.	76.45	c.

SECTION OBJECTIVE 7-3 AND EXAMPLES

Calculate the finance charge based on the average-daily-balance method where no new purchases are included.

A portion of Jamal Johnson's credit card statement is shown. A finance charge was added to his account balance because he did not pay his last bill in full. The finance charge was computed using the average-daily-balance method where new purchases are not included. Find the average daily balance, finance charge, and the new balance.

Reference	Posting Date	Transaction Date	Description	Purchases & Advances	Payments & Credits
7044598	6/04	6/02	Pictures	$103.95	
7044791	6/13		PAYMENT		$50.00
7049810	6/22	6/18	Shirt	56.49	
7050002	6/27	6/22	Paint	19.95	

Billing Period	Previous Balance	Periodic Rate	Average Daily Balance	Finance Charge
6/1–6/30	$125.88	1.5%	a.	b.

Payments & Credits	Purchases & Advances	New Balance	Minimum Payment	Payment Due
$50.00	$180.39	c.	$25.00	7/31

Continued on next page

STEP 1: Find the sum of the daily balances.

Dates	Payment	End-of-Day Balance	Number of Days	Sum of Balances
6/1–6/12		$125.88	12	$1,510.56
6/13	$50.00	75.88	1	75.88
6/14–6/30		75.88	17	1,289.96
		TOTAL	30	**$2,876.40**

STEP 2: Find the average daily balance.
Sum of Daily Balances ÷ Number of Days
$2,876.40 ÷ 30 = **$95.88 average daily balance**

STEP 3: Find the finance charge.
Average Daily Balance × Periodic Rate
$95.88 × 1.5% = **$1.438 or $1.44 finance charge**

STEP 4: Find the new balance.
Previous Balance − (Payments + Credits)
$125.88 − $50 = 75.88

Unpaid Balance + Finance Charge + New Purchases
$75.88 + $1.44 + $180.39 = **$257.71 new balance**

REVIEW EXERCISES

14. George Silas has a bank credit card. A portion of his account statement is shown below. Find the average daily balance excluding new purchases, the finance charge, and the new balance.

Reference	Posting Date	Transaction Date	Description	Purchases & Advances	Payments & Credits
2100091	3/07	3/06	Mower	$188.95	
2100187	3/17		PAYMENT		$75.00
2100766	3/20	3/18	Bicycle	58.88	
2100789	3/22	3/19	Work shoes	14.88	

Billing Period	Previous Balance	Periodic Rate	Average Daily Balance	Finance Charge
3/1–3/31	$651.20	1.75%	a.	b.

Payments & Credits	Purchases & Advances	New Balance	Minimum Payment	Payment Due
$75.00	$262.71	c.	$25.00	4/30

◄ **CONTENTS** ►

REVIEW EXERCISES *(continued)*

The finance charge is computed using the average-daily-balance method where no new purchases are included. Find the finance charge and the new balance for the following statements.

15.

Billing Period	Previous Balance	Periodic Rate	Average Daily Balance	Finance Charge
7/01–7/31	$156.90	2%	$143.00	a.

Payments & Credits	Purchases & Advances	New Balance	Minimum Payment	Payment Due
$85.00	$35.00	b.	$10.00	8/15

16.

Billing Period	Previous Balance	Periodic Rate	Average Daily Balance	Finance Charge
9/01–9/30	$705.09	1.5%	$655.35	a.

Payments & Credits	Purchases & Advances	New Balance	Minimum Payment	Payment Due
$100.00	$0.00	b.	$25.00	10/10

Find the average daily balance, the finance charge, and the new balance.

17.

Reference	Posting Date	Transaction Date	Description	Purchases & Advances	Payments & Credits
6345666	10/25	10/20	Dept. store	$32.45	
6345788	11/4	11/1	PAYMENT		$40.00

Billing Period	Previous Balance	Periodic Rate	Average Daily Balance	Finance Charge
10/15–11/14	$45.66	1.5%	a.	b.

Payments & Credits	Purchases & Advances	New Balance	Minimum Payment	Payment Due
$40.00	$32.45	c.	$15.00	12/10

SECTION OBJECTIVE 7-4 AND EXAMPLES

Compute the finance charge based on the average-daily-balance method where new purchases are included.

Martin Choi has a department store charge account where the finance charge is computed using the average-daily-balance method that includes new purchases. What is his average daily balance and his finance charge? What is his new balance?

Reference	Posting Date	Transaction Date	Description	Purchases & Advances	Payments & Credits
3809018	11/10	11/8	Fine art	$125.44	
3809117	11/20	11/15	PAYMENT		$200.00

Billing Period	Previous Balance	Periodic Rate	Average Daily Balance	Finance Charge
11/04–12/03	$623.11	1.25%	a.	b.

Payments & Credits	Purchases & Advances	New Balance	Minimum Payment	Payment Due
$200.00	$125.44	c.	$20.00	12/20

STEP 1: Find the sum of the daily balances.

Dates	Payment	Purchase	End-of-Day Balance	Number of Days	Sum of Balances
11/04–11/09			$623.11	6	$ 3,738.66
11/10		$125.44	748.55	1	748.55
11/11–11/19			748.55	9	6,736.95
11/20	$200.00		548.55	1	548.55
11/21–12/3			548.55	13	7,131.15
			TOTAL	30	**$18,903.86**

STEP 2: Find the average daily balance.

$$\text{Average Daily Balance} = \frac{\text{Sum of Daily Balances}}{\text{Number of Days}}$$

$18,903.86 \div 30 =$ **$630.13 average daily balance**

STEP 3: Find the finance charge.

$630.13 \times 1.25\% =$ **$7.88 finance charge**

STEP 4: Find the unpaid balance.

Previous Balance − (Payments + Credits)

$623.11 − $200.00 = $423.11

STEP 5: Find the new balance.

Unpaid Balance + Finance Charge + New Purchases

$423.11 + $7.88 + $125.44 = **$556.43 new balance**

Study Guide and Assessment

REVIEW EXERCISES

18. Drew Williams received this statement from his bank. Find the average daily balance (new purchases included), the finance charge, and the new balance.

Reference	Posting Date	Transaction Date	Description	Purchases & Advances	Payments & Credits
1238090	2/5	2/3	Home repairs	$ 75.66	
2789433	2/10	2/8	PAYMENT		$100.00
3459811	2/17	2/15	Discount store	198.33	
4334681	2/27	2/24	PAYMENT		50.00

Billing Period	Previous Balance	Periodic Rate	Average Daily Balance	Finance Charge
2/01–2/28	$36.54	2.1%	a.	b.

Payments & Credits	Purchases & Advances	New Balance	Minimum Payment	Payment Due
$150.00	$273.99	c.	$10.00	3/15

19. Freddie Vargo received this statement from the department store. Find the average daily balance (new purchases included), the finance charge, and the new balance.

Reference	Posting Date	Transaction Date	Description	Purchases & Advances	Payments & Credits
2034599	3/2		PAYMENT		$35.00
2034766	3/11	3/8	Housewares	$123.96	
2040009	3/20	3/12	Shoes	56.49	
2040065	3/25		PAYMENT		50.00

Billing Period	Previous Balance	Periodic Rate	Average Daily Balance	Finance Charge
3/1–3/31	$200.34	2%	a.	b.

Payments & Credits	Purchases & Advances	New Balance	Minimum Payment	Payment Due
$85.00	$180.45	c.	$25.00	4/30

20. Monica Sweeny received this statement from Market Street Bank. Find the average daily balance (new purchases included), the finance charge, and the new balance.

Reference	Posting Date	Transaction Date	Description	Purchases & Advances	Payments & Credits
1809008	9/20	9/15	Electronics	$25.44	
1809039	9/25		PAYMENT		$100.00
1809111	10/02	9/29	Sports Inc.	66.74	
1809388	10/10		PAYMENT		50.00

Billing Period	Previous Balance	Periodic Rate	Average Daily Balance	Finance Charge
9/15–10/14	$321.99	1.75%	a.	b.

Payments & Credits	Purchases & Advances	New Balance	Minimum Payment	Payment Due
$150.00	$92.18	c.	$15.00	11/10

◀ **CONTENTS** ▶

Math STUDIO
A Creative Lab

Credit Where Credit Is Due

You have your first job, and you're thinking about applying for a credit card. One of the most important reasons you'd like to open a credit card account is to establish a good credit history. You know that if you pay your credit card bills promptly and fully, the good credit rating you earn now will help you borrow money in the future for large purchases, including a car and house.

Purpose

Credit card companies will inundate you with their applications. It's hard to know which company to choose since each one seems to offer different terms, conditions, and enticements. This activity will include interviewing, investigating, and comparing to help you in your decision-making process.

Supplies Needed

- Pen
- Paper
- Poster board
- Marker pens
- If possible, a computer spreadsheet program

Your Activity

Step 1: Make a list of several credit card companies that you would consider when deciding whether to open an account.

A. Try to find a variety of companies (such as corporate banks, department stores, single-purpose cards, multipurpose cards, etc.).

B. Organize the list alphabetically and include the customer service telephone number and Web address for each company.
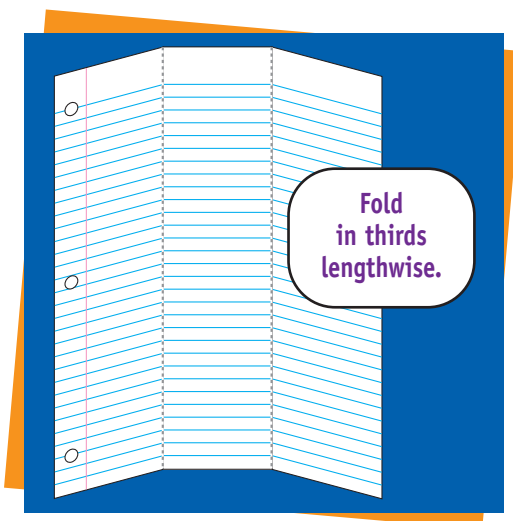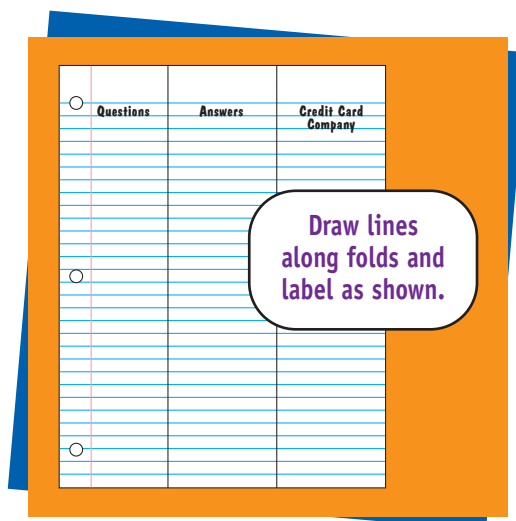
Fold in thirds lengthwise.

Figure 7.9   Step 1: Fold in thirds.

Questions	Answers	Credit Card Company

Draw lines along folds and label as shown.

Step 2: Label.

◀ **CONTENTS** ▶

Step 2: Ask your family and friends which credit cards they carry and try to find out why they chose that card.

Step 3: Try to find out if the people you talk with know and understand the terms of their credit card accounts.

A. Create a paper organizer before you start asking questions. (See **Figure 7.9** to see how it's done.)

B. Once you've created the paper organizer, then you can write these questions on it and get started on your interviewing process. You might ask the following questions:

- What is the annual fee for this card?
- What is the credit limit?
- Is it a single-purpose or multipurpose card?
- What is the finance charge rate on the card?
- How is the finance charge calculated (previous-balance method or average-daily-balance method)?
- Does this card have any special features such as cash back or frequent flier miles?

Step 4: Contact the credit card companies to ask them a few questions. Tell them you're inquiring about their services for a classroom assignment.

A. Go online or call customer service at each credit card company to determine:

- the annual fees,
- finance charges,
- benefits, and
- penalties for each card.

B. Compare this information with the answers given to you by your family and friends.

Step 5: Write a report that addresses the following questions:

- Do you think most people know enough about the terms of their credit cards? If not, does it matter? What are the risks of this lack of knowledge?
- What kinds of information are necessary for you to understand before you make a decision to obtain a credit card?
- If you decide to get a credit card, what do you need to know before choosing a particular card? Why?

Critique It

Given your decision to apply for this credit card, what are some questions you should ask the credit card company before signing on its dotted line and dreaming of that vacation to a distant land (courtesy of your credit card)?