3.3 Credit Cards and Store Promotions

MATH ON THE JOB

Tom Barrett's customers can enjoy berry picking, kayaking, or sea trout fishing tours. Tom is a guide and an owner of Experience Labrador, an adventure tour business based out of the Labrador town of Cartwright. Tom is of NunatuKavut, Montagnais-Naskapi Innu, and European ancestry. He grew up in Happy Valley-Goose Bay, Labrador.

To be a guide, Tom has taken courses on canoeing and kayaking, first aid, and navigation. Before taking customers on boat tours, he plots their course on a chart so that he can explain the route they will take and how they will find their way. Tom's job also includes creating invoices, ordering materials, and calculating prices.

Tom needs to purchase a new outboard motor. He sees one advertised for $995.00. As a special sales promotion, the outboard motor can be purchased on credit with a deferred payment plan. The customer does not pay anything for 6 months. After that he or she must make 5 payments of $199.00, plus 8.00% interest, every 4 months.

When transporting tourists by boat, Tom calculates speed in knots, distance in nautical miles or kilometres, and estimated time of arrival.

1. How much would it cost a customer to buy the outboard motor on the deferred payment plan?

2. Why might a customer choose a deferred payment plan?

EXPLORE THE MATH

"Buy Now, Pay Later!" "Sign up for our credit card and receive a free gift!" Promotions like these are used to attract customers and sell items that customers might not otherwise be able to afford, and to have people sign up for particular credit cards. When you make use of these promotions, you are relying on credit.

credit: an agreement in which a borrower receives something of value, and agrees to pay for it later

Credit is a type of loan in which a borrower receives something of value and agrees to pay the lender for it later.

finance charge: the total amount of interest paid to borrow a sum of money

Credit cards are issued by banks and other financial institutions, as well as by many department stores and gas companies. A credit card can be convenient, but if you do not pay the credit card balance by the due date, the credit card issuer charges interest on the remaining money you owe and on the cost of new purchases made before the next credit card statement date. This interest is called a **finance charge**. Credit card companies have different ways of calculating interest, so be sure you understand the terms of any card you may get.

Stores often offer promotions offering credit and allowing you to defer payment for months or years. These offers enable you to buy an item without paying the full amount immediately. In exchange, the stores often charge high interest rates on the purchase amounts when the payments are made.

Be sure you understand the conditions of a store promotion or credit card before you sign an agreement. Researching your credit options will help you to use credit effectively.

DISCUSS THE IDEAS
USING A CREDIT CARD

Working in a small group, brainstorm answers to the following questions. You can research the questions online.

1. Make a list of three available credit cards.

2. What is a minimum payment? Find an example showing how it is calculated.

3. What is a credit limit? Why do you think different people have different credit limits?

4. Research the differences between a store credit card and a credit card available from a bank. Compare the interest rates and annual fees charged by one store card and one credit card offered by a bank.

5. Name one advantage and one disadvantage of using a credit card.

Before getting a credit card, make sure you understand how interest will be calculated on your purchases.

Example 1

On January 12, John charges a **cash advance** of $500.00 to his credit card. This withdrawal appears on his monthly statement issued January 27. John does not pay off this amount by the due date shown on his statement. The next monthly statement is issued on February 27. John's bank charges 18.00% annual interest for cash advances starting on the day of the withdrawal.

Calculate the interest that John is charged for the January 12 cash advance.

cash advance: a withdrawal of cash from an ATM or bank teller charged to a credit card; interest is usually calculated from the day of the withdrawal

SOLUTION

Count the number of days from January 12 to February 27, including January 12.

There are 20 days left in January and 27 days in February.

$$20 + 27 = 47 \text{ days}$$

The annual interest rate for cash advances is 18.00%. Convert the percentage to a decimal.

$$18.00 \div 100 = 0.18$$

Calculate the interest charged for 47 days.

$$I = Prt$$

$$I = \$500.00 \times 0.18 \times (47 \div 365)$$

$$I \approx \$11.59$$

John is charged $11.59 in interest for the cash advance.

ALTERNATIVE SOLUTION

T   Use the internet to find a solution. Perform a keyword search to find an online "simple interest calculator." Calculate the number of days from January 12th to February 27th, including January 12th.

SIMPLE INTEREST CALCULATOR		
Principal or sum [P]	500	
Rate % per annum [R]	18	%
Time [T]	47	Days
Simple interest [S.I.]	11.589	
FIND		

- In the space for "Principal or Sum [P]", enter 500.
- In the space for "Rate % per Annum [R]", enter 18.
- In the space for "Time [T]", enter 47.
- Press "FIND".

The simple interest is about $11.59.

Example 2

Jane is charged 19.50% per annum on her credit card balances. She uses her credit card, which has no previous balance, to purchase a new wood stove th costs $2100.36. Her next credit card statement is dated September 30 and sh pays only the minimum payment (5% of her balance).

On October 5, Jane makes another purchase of $450.00 with her credit card

How much money will Jane owe on October 7? She makes no other purchas with her credit card.

SOLUTION

First calculate Jane's minimum payment.

$0.05 \times \$2100.36 = \$105.02$

Jane's unpaid balance on September 30 is her total purchases minus her payment.

$\$2100.36 - \$105.02 = \$1995.34$

Because Jane has an unpaid balance, daily interest is charged on the balance beginning on October 1. Calculate how much interest she will accumulate on the unpaid balance over 7 days (October 1–7).

$I = Prt$

$I = \$1995.34 \times 0.1950 \times (7 \div 365)$

$I = \$7.46$

Because she didn't pay her credit card bill in full, Jane will have to pay daily interest on any new purchases beginning immediately. Calculate how much interest she will accumulate on the new purchase of $450.00 over 3 days (October 5–7).

$I = Prt$

$I = \$450.00 \times 0.1950 \times (3 \div 365)$

$I = \$0.72$

Add the two interest amounts plus the unpaid balance.

$\$7.46 + \$0.72 + \$1995.34 = \$2003.52$

As of October 7, Jane will owe $2003.52.

ACTIVITY 3.7
UNDERSTANDING CREDIT CARD STATEMENTS

Laurie works for a company that makes customized granite counters and floors in Moncton, NB. She recently travelled to Labrador to meet with the Torngait Ujaganniavingit Corporation, which mines blue eye stone from the Ten Mile Bay Quarry on Paul Island. When she travels, she usually puts her expenses on her credit card. Her credit card company sends her a statement each month with the following explanation of terms on the back of the statement:

Blue eyes, also known as Labradorite, is mined primarily on Paul Island, NL, and is prized around the world for its beauty. It is the official provincial stone of Newfoundland and Labrador.

- The previous balance is the amount you owed from the previous month.

- The payment is the amount you paid on the previous month's bill.

- The unpaid balance is how much you still owe from last month's bill.

- The interest is calculated on the unpaid balance for the number of days from the last statement to this current statement.

- The new balance is the amount you owe for the current month.

- The new balance is the unpaid balance plus interest plus purchases.

- The unpaid balance is the previous balance less any payments.

- The minimum payment is 5% of the new balance or $10.00, whichever is greater.
- The credit available is the credit limit less the new balance.

Use Laurie's credit card statement to answer these questions.

1. What was the previous balance on Laurie's credit card?

2. The payment is shown as −$1428.00. Why is it a negative number?

3. How was the value of $2211.52 calculated for the purchases?

4. Did Laurie have to pay any interest in March? Explain.

5. How was the minimum payment calculated?

6. What payment will she have to make on or before April 28 so that she does not have to pay interest? Explain.

7. How is the available credit calculated?

	Bank of **ATLANTIC CANADA**	Customer Name:	Laurie Smith
		Card Number:	999 8888 7777 1234
		Statement Date:	April 2, 2011
		Previous Statement:	March 2, 2011

Transaction date	Posting date	Activity description	Amount ($)
PREVIOUS STATEMENT BALANCE			$1428.00
Mar 4	Mar 5	PAYMENT – THANK YOU	−$1428.00
Mar 4	Mar 5	Flights Canada	$1676.19
Mar 4	Mar 5	Sleep Well Hotel St. John	$223.59
Mar 4	Mar 5	Sushi St. John	$63.79
Mar 5	Mar 6	Gas Moncton	$55.00
Apr 1	Apr 2	Best Save Foods Moncton	$135.45
Apr 1	Apr 2	Quality Books	$57.50

Payment information		Calculating your balance	
Minimum payment	$110.58	Previous balance	$1428.00
Payment due date	Apr 28	Payments & credits	−$1428.00
Credit limit	$5500.00	Purchases	$2211.52
Available credit	$3288.48	Cash advances	$0.00
Annual interest rate	18.50%	Interest	$0.00
		Other fees	$0.00
		NEW BALANCE	$2211.52