

## Decision Making in Finance: Using Credit

### VI.D Student Activity Sheet 8: Making Sense of Credit

#### Anatomy of a Credit Card Statement

The following is a monthly statement from a typical credit card company. Parts left out intentionally are denoted by ??? and highlighted in gray.

<b>TEXAS CREDIT</b>		OPENING/CLOSING DATE:	7/19/08 – 08/18/08
		PAYMENT DUE DATE:	9/12/08
		MINIMUM PAYMENT DUE:	\$93.30
<b>CARD SUMMARY</b>		ACCOUNT NUMBER 5555 5555 5555 5555	
PREVIOUS BALANCE	\$2,342.51	TOTAL CREDIT LINE	\$3,000
PAYMENT, CREDITS	-\$150.21	AVAILABLE CREDIT	\$376
PURCHASES, CASH, DEBITS	\$410.89	CASH ACCESS LINE	\$500
FINANCE CHARGES	???	AVAILABLE FOR CASH	\$376
NEW BALANCE	???		
<b>TRANSACTIONS</b>			
DATE	DESCRIPTION	CREDIT	DEBIT
7/23	GAS		\$70.61
7/24	PAYMENT – THANK YOU	\$100	
7/24	HARDWARE STORE		\$139
7/28	FLOWERS		\$24.95
8/03	GROCERIES		\$176.33
8/18	HARDWARE STORE RETURN	\$50.21	
<b>FINANCE CHARGES</b>			
	DAILY PERIODIC RATE	AVERAGE DAILY BALANCE	FINANCE CHARGE DUE TO PERIODIC RATE
TYPE	31 DAYS IN CYCLE	APR	
PURCHASES	???	28.99%	???
CASH	???	28.99%	\$0

- Use the information in the statement to determine the balances throughout the month and then calculate the average daily balance for these purchases.
- The daily periodic rate describes the interest you are paying on your credit every day.
  - Use the following formula to calculate the daily periodic rate to five decimal points.
  - Use this rate to determine the finance charge to the nearest cent. (*Note: APR stands for annual percentage rate.*)

$$\text{daily periodic rate} = \frac{\text{APR}}{\text{days in year}}$$

- Calculate the new balance, considering credits, debits, and finance charges.

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4. What percentage is the minimum payment to the new balance before interest?
5. Marley has a credit card with an APR of 22.75% and a current balance of \$14,677.90. If Marley uses the same percentages from the previous questions, what is her minimum payment (to the nearest cent)?
6. Using the minimum payment from Question 5, how long will it take Marley to pay off the current balance, assuming she does not add any more charges to her credit card? How much in interest would paying only the minimum every month cost her?

Variable	Definition of Variable	Value in Marley's Situation
<i>N</i>	number of compounding periods	
<i>I%</i>	annual interest rate (as a percent)	
<i>PV</i>	principal, or present value	
<i>PMT</i>	amount of each regular payment	
<i>FV</i>	future value	
<i>P/Y</i>	number of payments per year	
<i>C/Y</i>	number of compounding periods per year	

7. Suppose Marley makes \$2,500 per month. Create a budget for Marley to find how much she has left over to pay the minimum on her credit card. (Remember to consider the taxes taken out of her paycheck: Social Security—6.2%, Medicare—1.45%, and federal income tax—15%.)

Can Marley afford the minimum payment? If so, how much more than the minimum can she pay? If not, what do you recommend she do to afford the payment and pay off the credit card?

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8. The credit statement shows the APR. However, most credit card companies compound interest more often than annually. The actual interest rate you pay each year, taking into account compounding, is called the **effective annual rate (EAR)**. It can be calculated with the following formula:

$$\text{EAR} = \left( 1 + \frac{\text{APR}}{n} \right)^n - 1, \text{ where } n \text{ is the number of compounding periods per year.}$$

Benny's credit card APR is 26.55% compounded daily. What is his actual interest rate per year—that is, his EAR?

9. **REFLECTION:** Is the EAR higher than the APR? Why or why not?
10. **EXTENSION:** Research nonprofit consumer debt counseling sites that explain the elements of a credit card statement, some misconceptions about credit, and the pitfalls that get credit card users in trouble.