Case Study 4.1: Credit Card Payments

Resource Material: Individually obtained Credit Card Disclosure Statement from a variety of possible sources. For example: www.capitalone.com.

Learning Goals: The learning goals of this case study include careful reading of financial rules and regulations, working with interest, performing calculations with recursive formulas, and calculating a revolving monthly balance on a credit card statement. Terms such as APR, grace period, and minimum payment are introduced and used.

This case study addresses the basic issue of credit card debt and what happens if the card holder makes only the minimum payments on the credit card balances. In addition, these exercises explore what occurs if the card holder misses one or two payments.

Warm Up Exercises for Case Study 4.1

1. An annual interest rate of 13.5% would be equivalent to what monthly rate? What would be the daily rate?
2. What annual percentage rate (APR) would incur a monthly interest charge of $14 on a balance of $1,700?
3. If you paid $27 on your last month's credit card balance of $950 and your credit card has an advertised APR of 13.5%, what is the balance on this month's credit card bill?
4. Jackson is paying his current credit card bill. His bill says he had a starting balance of $2,500, an interest charge of $31.25, and a credit of $45 (from his last payment).
   a. What is the remaining balance on his credit card?
   b. His credit card company requires him to pay a minimum payment that consists of the current interest charge plus 1% of his balance. What is Jackson's minimum payment this month?
   c. If Jackson makes only this minimum payment, how much of his payment goes towards interest and how much goes towards paying off the balance on the credit card? *Give you answer in both dollars and percents.*
   d. What is the remaining balance on his credit card the next month?

Article for Case Study 4.1

[By checking your mailbox or visiting various financial websites, locate a current credit card offer. Be sure to retrieve the full disclosure of all the rules and regulations pertaining to the credit card.]

Study Questions for Case Study 4.1

1. **Obtain a current credit card offer and read through the terms. Identify the following information. (You may have to dig into the "fine print."):**

   a. **APR (Annual Percentage Rate): Note that there are often different categories (payment, transfer) and rates (introductory and regular). These rates can also be fixed or variable. Determine the regular payment APR for your card. If the rate is listed as variable, indicate how this rate is determined. Does your card have a Default APR? If so, what is it and when does it get used?**

   b. **Grace Period: Most credit cards have a grace period on new purchases. State whether your card has a grace period and when it applies.**

   c. **Does your card have an annual fee? If so, what is it?**

   d. **How is the minimum payment determined?**

   e. **What happens if you miss one or more payments?**

2. **Credit cards allow the holder to purchase an item and take it home to enjoy while paying for the item at a later date. Purchasers may pay for the item in full when they receive their first statement. For companies that offer "grace periods," no additional interest is charged. However, often people use credit cards when they plan to pay for an item over several months or years. If one does not pay off the entire credit card balance, interest will be charged on ALL purchases, and the interest owed is then calculated from the date of purchase (not the date the bill is received). Thus, there is no grace period at all.**

   Suppose you have your eye on a nice big screen TV that costs $2,000. You decide to use your new card to make the purchase. Assume that you do not plan to pay the debt off in full at the first billing, so you will be subjected to interest charges each month.

   a. **Using the regular purchase APR, determine the monthly interest rate for your card.**

   b. **If your card has a grace period, when you receive your first bill (say, in one month), there should be no interest charge. If you make the required minimum payment, how much will you have to pay the first month? What is the remaining balance (amount you owe) on the card?**

   c. **Assuming you only make the required minimum payment, your second bill will have an interest charge. Assuming you are charged one month of** interest on the remaining balance, how much will you be charged in interest on your second bill?

d. Your new minimum payment will be computed by using the starting balance plus the interest charged. What is the minimum payment required on your second bill?

e. Assuming that you again just make the minimum payment, what percent of your payment goes towards interest and what percent goes towards reducing your original balance of $2,000?

f. When your third bill comes, what is the new balance and minimum payment?

3. Suppose you keep making the minimum payment for one year.

   a. After one year, what is the current balance on the credit card?

   b. After one year, how much have you paid the credit card company?

   c. Of all the money you paid the credit card company, what percent went towards reducing the original balance of $2,000, and what percent went towards interest payments?

   d. If you keep making minimum payments, how long do you think it will take to pay off the purchase of the TV? *An estimate based on your work so far will suffice.*

4. Use a spreadsheet, such as Excel, to keep track of the following quantities:

   a. Statement number (first, second, etc.)

   b. Interest charged that month

   c. Current balance

   d. Minimum payment required

   e. Total amount of interest paid to date

   f. Total of all payments made

   g. Percent of payment which is interest

   How long will it take to pay off the original purchase price of $2,000? How much interest would you have to pay for this privilege?

5. How would the scenario change if you could afford to pay twice the minimum payment every month?

6. What happens if, for some reason, you miss your payments twice during the first year?

7. Is it worth "shopping around" for a credit card with a lower APR? Explain when this would be advantageous and why.