

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.

| | | | |
|-------------------------|-----------------------|---|-------------------------------------|
| TEXAS CREDIT | | OPENING/CLOSING DATE: | 7/19/08 - 08/18/08 |
| | | PAYMENT DUE DATE: | 9/12/08 |
| | | MINIMUM PAYMENT DUE: | \$93.30 |
| <u>CARD SUMMARY</u> | | <u>ACCOUNT NUMBER 5555 5555 5555 5555</u> | |
| 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 | ??? | | |
| <u>TRANSACTIONS</u> | | | |
| <u>DATE</u> | <u>DESCRIPTION</u> | <u>CREDIT</u> | <u>DEBIT</u> |
| 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 | |
| <u>FINANCE CHARGES</u> | | | |
| | DAILY PERIODIC RATE | AVERAGE DAILY BALANCE | FINANCE CHARGE DUE TO PERIODIC RATE |
| TYPE | 31 DAYS IN CYCLE | | |
| PURCHASES | ??? | 28.99% | ??? |
| CASH | ??? | 28.99% | \$0 |

1. Use the information in the statement to determine **a)** the overall balances due throughout the month (including the amount due from the last billing cycle) and **b)** calculate the average daily total balance due for your credit card charges.

| Date(s) | Amount Credited/Debited | Total Balance Due | Total Balance Due × Days |
|--|-------------------------|-------------------|--------------------------|
| 7/19 to 7/22 4 days | \$0 | \$2342.51 | 2342.51(4) = 9370.04 |
| 7/23 1 day | \$70.61 | \$2413.12 | 2413.12(1) = 2413.12 |
| 7/24 to 7/27 4 days | +\$139 - \$100 = \$39 | \$2452.12 | 2452.12(4) = 9808.48 |
| 7/28 to 8/2 6 days | \$24.95 | \$2477.07 | 2477.07(6) = 14862.42 |
| 8/3 to 8/17 15 days | \$176.33 | \$2653.40 | 2653.40(15) = 39801 |
| 8/18 1 day | -\$50.21 | \$2603.19 | 2603.19(1) = 2603.19 |
| 31 days | | Total = | 79858.25 ÷ 31 |
| Average daily <u>total</u> balance due = | | | \$2543.81 |

2. The **daily periodic rate** describes the interest you are paying on your credit every day.
 a) Use the following formula to calculate the **daily periodic rate** to five decimal points. (Note: APR stands for *annual percentage rate*.)

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

$$= \frac{28.99\%}{365} = 0.07942\%$$

- b) Use this rate to determine the **finance charge (average daily total balance due × daily periodic rate × # days in billing cycle)** to the nearest cent. A lot of credit card companies will charge you this amount for just USING your credit card to make purchases!

$$(\$2543.01) \left(\frac{31}{\text{days}} \right) (0.0007942) = \$62.63$$

3. Marley has a credit card with an APR of 22.75% and a current balance of \$14,677.90. If the minimum monthly payment for her card is 3.5%, how long will it take Marley to pay off the current balance, assuming she does not add any more charges to her credit card?

| 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) | 22.75% |
| <i>PV</i> | principal, or present value | 14677.90 |
| <i>PMT</i> | amount of each regular payment | -513.73 |
| <i>FV</i> | future value | 0 |
| <i>P/Y</i> | number of payments per year | 12 |
| <i>C/Y</i> | number of compounding periods per year | 12 |

42 months
 ÷ 12
 = 3.5 years

$$0.035 \times 14677.90 = \$513.73$$

end!

How much in interest would paying only the minimum every month cost her?

how much she's actually paying = $(513.73)(42) = \$21576.66$

$$\$21576.66 - 14677.90 = \boxed{\$6898.76}$$

wah! :)

AMDM SAS 10: Buying Losing Credit - Modified

1. Christina is considering buying a new car with a sticker price of \$23,599. Her credit union offers her a three-year car loan at 5.99% annual percentage rate (APR) with 10% as a down payment.

a) How much is her down payment?

$$(23599)(0.10) = \$2359.90$$

b) How much does she still have to pay back (the present value)?

$$\$23599 - 2359.90 = \$21239.10$$

c) What is her monthly payment? (Use the TVM solver on your calculator)

| Variable | Definition of Variable | Value in Christina's Loan Situation |
|------------|--|-------------------------------------|
| N | number of compounding periods | 3(12) |
| I% | annual interest rate | 5.99 |
| PV | principal, or present value | 21239.10 |
| PMT | amount of each regular payment | ? → \$1646.04 |
| FV | future value | 0 |
| P/Y | number of payments per year | 12 |
| C/Y | number of compounding periods per year | 12 |

end

2. Christina's car will be worth \$14,250 in three years. What will the total cost of the car be at the end of the loan?

Total Cost = [(Total Monthly Payments) + (Down Payment)] - Current Value of Car =

$$[(1646.04)(36) + 2359.90] - 14250 = 25617.34 - 14250$$

3. What is the benefit of taking out a loan for a car and having to pay interest?

you own the car without paying full amount up front.

$$= \$11,367.34$$

total cost of car

4. What is/are the negative consequence(s) to taking out a loan for a car?

- a) interest
- b) down payment
- c) loss of value

5. **Extension** Christina considers a different option. The dealership offers 0% down and 0% APR for two years.

a) What will the monthly payments be under these conditions if she pays off the car in two years (assume that she is still buying the car for \$23,599)? 24 months

$$\frac{\$23599}{24} = \$983.29$$

b) Assume that the car is worth \$17,629.00 in two years. How much will the total cost of the car be if Christina takes this loan?

$$(\$983.29)(24) - 17629 = 23599 - 17629 = \boxed{\$5970}$$

c) Which loan should Christina take? Why?

- ① the 3 year because the monthly payments are lower
 or ② the 2 year because total cost is lower

6. Christina has an offer to lease the same car for three years at \$349 per month. The lease has a **balloon payment** of \$1,200 at the end of three years. What is the total cost of the lease?

$$(\$349)(36) + 1200 = \boxed{\$13,764}$$

7. What interest rate is Christina being charged for leasing the car?

| Variable | Definition of Variable | Value in Christina's Loan Situation |
|------------|--|--|
| <i>N</i> | number of compounding periods | 3(12) |
| <i>i%</i> | annual interest rate | ? → 5.6% |
| <i>PV</i> | principal, or present value | \$23599 |
| <i>PMT</i> | amount of each regular payment | -349 |
| <i>FV</i> | future value | -14250 (worth in 3 years) |
| <i>P/Y</i> | number of payments per year | 12 |
| <i>C/Y</i> | number of compounding periods per year | 12 |

Should Christina take the lease? Why or why not?

- Yes - smaller monthly payments & smaller interest rate.
- NO - overall cost is more than the loan.
 \$13,764 versus \$11,367.34

end