

CREDIT CARDS

In the first part of this unit, we have looked at different ways of earning interest on investments. There is another side to this story – that is when you borrow money or take out a loan to buy something that you pay for later. This is called buying on credit. Credit is the type of loan where the borrower receives something of value, and agrees to pay for it later. The best example of people buying on credit is when they use a credit card.

Credit cards have many good features – they are very convenient, and they are a way to improve your credit rating is by using a credit card responsibly, and only charging what you can pay off in full each month. But if you do not pay the balance by the due date, the credit card company charges you interest. The rates for most investments recently are fairly low – mostly less than 4%. However, if you borrow money or use your credit card and do not pay it off each month, the finance charges – the total amount of interest paid to borrow that money – are much higher. While you may get as little as 1.5% on an investment, you may have to pay 19.5% or more on an unpaid credit card balance! You may think this is illegal, but it is not. When you agree to use a credit card, these rates are published on each statement. However, people don't always read them carefully and can get into a lot of debt trouble using credit cards they can't pay off each month.



To calculate the interest due on credit card accounts, the simple interest formula is used. Be careful to convert the interest rate to a non-percentage number, and to accurately determine the term in years.

Example 1: Calculate the interest due on an unpaid credit card balance of \$2067.45 at a rate of 19.5% for 17 days.

Solution: Assign the values to their correct spot, substitute and solve.

$$I = ? \quad P = \$2067.45 \quad r = 19.5\% \div 100 = 0.195 \quad t = 17 \text{ days} = 17 \div 365$$
$$I = 2067.45 \times 0.195 \times 17 \div 365 = \$18.78$$

The interest due is \$18.78.

You may not think this is very much money, but consider that this is just for 17 days!

Example 2: Ray has an unpaid credit card balance of \$4384.67 that charges an interest rate of 19.5%. His payment was due on March 23 and he paid the minimum of \$50. What will his balance be on April 15?

Solution: Calculate the term, assign the values correctly, substitute and solve.

The term is: March 23 to March 31 = 9 days, and April 1 to April 15 = 15 days

$$t = 9 + 15 = 24 \text{ days}$$

$$I = ? \quad P = \$4384.67 \quad r = 19.5\% \div 100 = 0.195 \quad t = 24 \div 365$$

$$I = 4384.67 \times 0.195 \times 24 \div 365 = \$56.22$$

The interest due is \$56.22 (which is more than his payment last month!)

$$\text{Ray's new balance} = \$4384.67 + \$56.22 = \$4440.89$$

Credit card companies require you to pay a minimum payment each time they issue a statement. This **minimum payment** is a percentage of the unpaid balance or a flat dollar amount, usually whichever is greater. Credit card companies are now required by law to print on monthly statements how long it will take to pay off a balance if no further purchases are made and if only the minimum payment is made each month. It can be a scary amount of time for a small balance! Here is an example.

	Previous Balance	\$225.52	Credit Limit	\$5,000.00
LESS	Payments & Credits	\$230.00	Available Credit Limit	\$4,740.31
PLUS	New Charges/Adjustments inc. Interest, if any	\$264.17	Available Cash Limit	\$1,000.00
EQUALS	New Balance	\$259.69		
Minimum Amount Due on Sep 3, 2011		\$10.00	Payment Period Remaining	
<small>Statement includes payments and charges received by Aug 13, 2011</small>			<small>If each month you pay the Minimum Amount Due only 2 Year(s) 9 Month(s)</small>	

Minimum Payment - The Minimum Payment is (i) 3% of the outstanding balance as of the statement Closing Date or \$10.00, or the entire new balance if it is less than \$10.00, plus (ii) any previously billed minimum payments that remain unpaid on the Closing Date of the statement.

Example 3: Max has an unpaid balance on his credit card of \$494.95. His credit card company charges an interest rate of 19.75%. Max must pay a minimum payment of 12.5% or \$75, whichever is greater. What is Max's minimum payment?

Solution: Calculate the minimum payment multiplying the rate by the amount.

$$\begin{aligned} \text{balance} &= \$494.95 & r &= 12.5\% \div 100 = 0.125 \\ \text{Payment} &= 494.95 \times 0.125 = \$61.87 \\ \text{The amount } \$61.87 &\text{ is less than } \$75.00, \text{ so Max must pay } \$75.00. \end{aligned}$$

Another way that credit card companies make money is by charging higher rates for cash advances. A **cash advance** is a withdrawal of cash from a bank or ATM machine charged to a credit card. The interest rate charged for a cash advance is usually higher than for purchases, and it is calculated from the day you withdraw the cash advance.

Example 4: On March 12, Jill charges a cash advance of \$500 to her credit card. This charge appears on her monthly statement issued on March 27. Jill does not make any other purchases with her credit card. Jill's bank charges a 22% interest rate for cash advances, starting on the day of the withdrawal. How much interest does Jill currently owe for this cash advance?

Solution: Calculate the term, assign the values correctly, substitute and solve.

$$\begin{aligned} \text{The term is: March 12 to March 27} &= 15 \text{ days,} \\ I = ? & \quad P = \$500.00 & r &= 22\% \div 100 = 0.22 & t &= 15 \div 365 \\ I &= 500 \times 0.22 \times 15 \div 365 = \$4.52 \\ \text{The interest due is } & \$4.52. \end{aligned}$$

ASSIGNMENT 6 – CREDIT CARDS

- 1) How much interest is due on an unpaid credit card balance of \$1047.28 at a rate of 21.25% for 27 days?

- 2) How much interest is due on an unpaid credit card balance of \$2111.67 at a rate of 18.5% for 5 months?

- 3) Adam has an unpaid credit card balance of \$765.43 that charges an interest rate of 19.75%. If his payment was due on September 23, how much interest will he owe on October 14? Hint: September has 30 days.

- 4) Debbie has an unpaid credit card balance of \$568.93. Her credit card company charges 24% per year, counting each day that an amount is owed. If she did not pay anything on July 10, her due date, how much does she owe on her next statement date, August 2? July has 31 days.

- 5) Stuart has an unpaid credit card balance of \$268.67. What is his minimum payment if his credit card company charges an interest rate of 18.25%, and Stuart must pay 3% or \$25, whichever is greater?

6) If Jamie took a cash advance of \$259 on her credit card for 42 days and is charged an interest rate of 21.75%, how much interest will she be charged for that period?

7) Harvey used his credit card to make the following purchases during the month. He does not have a previous balance

<i>Date</i>	<i>Item</i>	<i>Amount</i>
July 3	Oil Change	\$107.42
July 6	Groceries	\$139.88
July 10	Gas	\$62.00
July 15	Groceries	\$89.71
July 19	Dinner	\$47.69
July 22	Plane ticket	\$725.27

a) What is his balance due on his statement date of July 27?

b) If the minimum payment is 5% or \$25.00 whichever is greater, what is Harvey's minimum payment?

c) If Harvey only pays the minimum payment and doesn't use his credit card between July 27 and August 27, how much will he owe on his statement on August 27?