

Day 8: Credit Cards

Thursday, December 19, 2013 1:35 PM

AW Math 11

DAY 8 Credit Cards and Store Promotions notes

Credit: Buying something with borrowed \$

Finance Charge: Interest charged to borrow \$

Cash Advance: ATM → Credit card → withdraw \$

Down Payment: Saved money you pay towards a bigger purchase

Purchase Date: Date you buy something

Billing Period: Period between billing statements

Due Date: Payment by certain date

Minimum Payment: often between 5-10% or \$50, whichever is greater

Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct
31	28	31	30	31	30	31	31	30	31
Nov	Dec								
30	31								

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EXAMPLE 1 Calculating Credit Card Interest

Sheng Li put a trip onto his credit card on March 15; it cost \$4384.76. His card has an interest rate of 19.50% per annum. The payment is due on March 23. His minimum payment is \$50.00 or 10% of the outstanding balance, whichever is more.

- a) What is the **minimum** he should pay? What will happen if he doesn't pay this?

$$\$50 \text{ or } 4384.76 \times 0.10 = \boxed{\$438.48} \rightarrow \text{minimum payment}$$

→ Credit can suffer

- b) What would owe if he did *not* pay the minimum, but then paid off the full amount owing on March 25?

March 15 (Purchased) March 23 (due) March 25 (Paid)

~~days~~ # of days: $25 - 15 = 10 + 1 = 11$ days of interest
 (day of purchase)

$$I = Prt \quad t = \frac{11 \text{ days}}{365 \text{ days}} = 0.0301$$

$$I = 4384.76 (0.195) (0.0301)$$

$$I = \$25.74$$

$$\text{Total owed: } 4384.76 + 25.74 = \boxed{\$4410.50}$$

Assignment # 2, 4, 5

For questions where a minimum payment *is* paid followed by balance paid at a later date, these are the steps you should follow:

1. Calculate the minimum payment (but don't subtract it yet)
2. Count the number of days that interest will be charged (interest is charged from **date of purchase** once your full balance is not paid off on due date)
3. Use $I = Prt$ to find the amount of interest on the full balance from the purchase date to the full payment date.
4. Calculate what is owing as the **purchase plus interest**; then subtract any minimum payment that was made, and the remaining amount is "**amount owed**" on the end date.

*Credit cards vary in how they apply the minimum payment, so these steps make our calculation easiest.

** For any range of dates, include the *date of purchase* and *date of payment* in the range when you count the number of days

EXAMPLE 2 Calculating Credit Card Payments

Daphne is charged 18.95% per annum on her credit card balances. She used her credit card, which had no previous balance, to make a purchase of \$2198.95 on April 5th. She did not use the card again before her statement due date, which was April 29.

- a) If Daphne paid her entire credit card off on April 29, what would she owe?

\$2198.95 ~~no~~ interest charged

- b) If Daphne paid the minimum of 5% of the balance or \$50 (whichever is greater) on April 29th, and paid her full balance on May 15th, what would she owe on May 15th?

1. min pay: 2198.95×0.05
 $= \$109.95$ or \$50

2. Count Days \rightarrow int.
 April 5 \rightarrow May 15
 $(30 - 5 + 1) + 15 \text{ days}$
 $= 41 \text{ days}$

3. $I = Prt$ $t = \frac{41}{365} = 0.1123$

$I = 2198.95 \times (0.1895) \times (0.1123)$

$I = \$46.80$

4. $2198.95 + 46.80 - 109.95$

$= \$2135.80$

minimum payment **20**

#3 omit #6

DAY 8 Credit Cards and Store Promotions assignment

1 The minimum monthly payment for Hasan's credit card is 6% of the unpaid balance. If his **minimum charge** is \$91.68, what is the **unpaid balance**?

2 Calculate the interest due on the following credit card balances:

- a. an unpaid balance of \$2076.54 at a rate of 19.50% for 15 years.

- b. an unpaid balance of \$1007.48 at a rate of 21.50% for 38 days.

- c. an unpaid balance of \$2019.64 at a rate of 18.50% for 18 months.

3. Marcia's credit card company charges 24.00% per annum, counting each day that an amount is owed. What will she owe on an item that cost \$500 if she bought it on March 1st, her due date is March 17, she pays a \$50 minimum, and she pays off the full balance owing on April 17?

4. Harley used her credit card to make the following purchases during the month. She does not have to pay interest on purchases during the month, only if they become overdue (called 'outstanding balance'). Her credit card company charges 18.20% per annum.

Date	Item	Amount
November 2	Groceries	\$124.32
November 7	Dress	\$187.54
November 12	Dinner	\$32.42
November 16	Groceries	\$154.21
November 21	Gas	\$54.24
November 23	Plane ticket	\$654.32

- a. What is her balance due on the **statement date**, November 28?
- b. If the minimum payment is 5% or \$10.00, whichever is greater, how much is Harley's minimum payment?
5. Javier's credit card charges 24.90% interest per annum. He used his credit card, which had no previous balance, to take out a cash advance of \$550.00 on December 10. Interest is calculated starting on the day of the withdrawal.
- a. Javier's next statement is dated December 21. For how many days is interest calculated for the balance on this statement?
- b. How much will he owe on his December 21 statement?
- c. What is the actual cost of the cash withdrawal if he pays his bill in full on January 10?

6. Jim's credit card charges 18.50% per annum interest. On his June 12 statement, he had a balance of \$3198.51. By the due date, he made the minimum payment (5% or \$10.00, whichever is greater). On June 14, he made another purchase of \$575.54.
- a. **If he makes no other purchases or payments, what will his balance be on his next statement, dated July 12?** (Calculate interest back to June 12 on the outstanding balance, and assume he is not charged any interest on the new purchase since it is in the grace period for this month.)
- b. On his July 12 statement, what would his minimum payment be?
- c. What is Jim's best option on July 12? What is likely to happen if he only makes the minimum payment?