

5.1 Credit Cards

- Credit is the ability to BORROW money.
- A Credit Card allows you to borrow money at a set INTEREST RATE.
- Almost all credit cards have a CREDIT LIMIT which is the maximum amount of money you can borrow.
- Specialty credit cards charge an annual fee while offering enticing REWARDS (examples: cash back, prizes, travel/air miles, store 'points' etc.)

Credit Card Terminology

Statements

- Each month you receive a statement telling you your BALANCE (ie. the amount of money you owe)
- A DUE DATE for paying a portion of the balance (minimum payment) is also given.

Grace Period

- The time between the purchase on your card and the moment that interest is charged is known as the GRACE PERIOD.
- Again, you are NOT charged INTEREST during the grace period.

Payments

- Most cards have a REVOLVING BALANCE which allows you to make a MINIMUM payment, as mentioned above. You pay only PART of the total balance owing.
- If you fail to make even a minimum payment, you will not only pay more in interest, but your CREDIT rating will be affected.

A.P.R.

- Annual Percentage Rate

Types of Cards

Card	Balance	Limit	Accepted at	Fees	Rewards	Examples
Standard	Revolving	Yes	Most retail locations (stores/restaurants)	None, low, or high	None, limited, or good	Visa, MasterCard
Charge	Pay in full	No	Not all retail locations	High	Good	American Express
Limited Purpose	Revolving	Yes	Certain stores only	Low	Price (in-store) offers	Home Depot card etc.
Secured	Revolving	Yes	Most stores	Security deposit + high fees	Limited	Secured Visa

So, why use this type of card? _____

Example Question

Use the following statement to answer the questions.

CREDIT CARD STATEMENT

Statement Date: August 20
New Balance: \$944.95
Minimum Payment: \$19.00

Annual Percent Rate (APR): 29.99%
(compounded daily and charged on unpaid balance)

- What is the balance owing? \$944.95
- What is the minimum payment? \$19.00
- What is the annual interest rate? 29.99% = 0.2999
- How often is the interest rate compounded? DAILY
- If the owner of this credit card pays only the minimum balance and makes no other purchases how much will they owe in 31 days?

$$\$944.95 - \$19.00 = 925.95 \text{ (new balance)}$$

$$+ 31 \text{ days interest: } A = P(1+i)^n$$

$$A = 925.95 \left(1 + \frac{0.2999}{365}\right)^{31}$$

$$A = \$949.83$$

5.2 Loans

What is a Loan?

- Another way to BORROW money.
- Usually used for larger amounts of money.
Examples: car loan, tuition, mortgage, etc.
- For most loans, interest is calculated DAILY and paid MONTHLY (unless you opt to pay BI-WEEKLY).

Types of Loans

- A loan can be SECURED or UNSECURED
- A SECURED loan requires COLLATERAL
- Collateral is an asset the lender may take if the loan is not paid back. Ex. car, property, etc.

Loan Type	Secured by	Intended for	Interest Paid	Interest Rate	Features
Personal	Unsecured	No restrictions	Monthly	High	None
Personal	Collateral	No restrictions	Monthly	Lower	None
Payday/Cash Advance	Collateral	Before payday commitments	Monthly	Very high	None
Student Loan	Unsecured	Tuition	Monthly → starting 6 months after graduation	Low	Must be enrolled in a post-secondary institution
Car Loan	The vehicle	A vehicle	Monthly	Low	Loan period for the "life" of the vehicle (~5-7 years)
RRSP Loan	RRSP's value	RRSP	Monthly	Low	RRSP contributions are used as a tax deduction
Mortgage	The house	A home	Monthly	Low	Maximum of 25 years, but exceptions occur

How do you get a Loan?

- The lender will look at several things before providing you with a loan and determining how much the loan will be:
 - level of income
 - assets
 - debt
 - credit rating
- The lender may also use equity existing in an item such as a house or a car
- Equity is the DIFFERENCE between what an item was originally worth and how much money you have left to pay towards fully securing ownership of it.

Ex. 1. Jim's car is worth \$10,000. He has paid \$2,000 towards the car and still owes \$8,000. How much equity does the car have?

$$\text{\$ } 2000 \quad (\text{worth } 10\text{K} - \text{owing } 8\text{K})$$

Ex. 2. Doug wants to take out a loan using his car as equity. The bank will lend him 75% of the equity of his car. Doug's car is worth \$45,000 but he still owes \$15,000 on it. How much will the bank lend Doug?

$$\text{equity} = 45000 - 15000 = 30000 \times 0.75 = \text{\$ } 22500 \text{ loaned}$$

Ex. 3 Nicolas is paying his \$18,900 student loan. The interest rate is 3.2%/yr compounded daily and payable monthly. In his first payment he will pay the interest owing and an extra \$300 towards the principal. How much is the first payment?

$$A = P(1+i)^n$$

$$A = 18900 \left(1 + \frac{0.032}{365}\right)^{30}$$

$$A = 18949.77$$

$$I = A - P = 18949.77 - 18900$$

$$= 49.77$$

+300 twds principal

$$\boxed{\text{\$ } 349.77}$$

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5.3 Lines of Credit

What is a Line of Credit?

- A Line of Credit is a 'new-age'-type of loan that is provided to an individual by a BANK or BUSINESS.
- Interest is payable only on the CREDIT USED.
- Interest is compounded DAILY and paid MONTHLY.
- Interest rates are usually much LOWER than a credit card or loan.

Types of Lines of Credit

Type	Secured by	Credit Limit	Transaction Fees
Personal	Collateral, or there are unsecured	Revolving credit line with a set limit	None, usually
Overdraft	Collateral	Usually less than \$5000	A monthly fee, plus a processing fee for each overdraft transaction
Home Equity	Equity in home	Revolving. The limit increases as equity increases	None, usually

Examples

1. Alicia has an overdraft line of credit. Each overdraft transaction costs \$5, plus interest at 21% /yr, compounded daily. On Tuesday, Alicia has 3 overdraft transactions for \$83. She paid back the money in 10 days. How much did she pay altogether?

$$3 \times \$5 = \$15 + \text{interest}$$

$$A = P(1+i)^n$$

$$A = 83 \left(1 + \frac{0.21}{365}\right)^{10} \leftarrow 10 \text{ days}$$

$$A = \$83.48$$

$$\$15 + \$0.48$$

$$I = 83.48 - 83 = \$0.48$$

$$= \boxed{\$15.48}$$

2. Loretta wants to start a business.

- She needs a \$4000 line of credit to buy equipment.
- Interest is 5.75% /yr, compounded daily
- The chart shows Loretta's transactions for 1 yr.

How much interest did she pay on her line of credit?

Transaction Amount	Time
\$3200	98 days
\$900	173 days
\$1450	67 days

$$A = P(1+i)^n$$

$$i) \quad A = 3200 \left(1 + \frac{0.0575}{365}\right)^{98}$$

$$A = 3249.78$$

$$I = \$49.78$$

$$iii) \quad A = 1450 \left(1 + \frac{0.0575}{365}\right)^{67}$$

$$A = 1465.38$$

$$I = \$15.38$$

$$ii) \quad A = 900 \left(1 + \frac{0.0575}{365}\right)^{173}$$

$$A = 924.86$$

$$I = \$24.86$$

$$\text{total } I = 49.78 + 24.86 + 15.38$$

$$= \boxed{\$90.02}$$

5.4 Sales Promotions

A carton of juice sells for \$8.99. Which of the following is the best deal?

- Buy two get one free
- Sale price of \$6.99
- 30% off
- $\frac{1}{4}$ off the regular price.

$$a) \$8.99 \times 2 = \$17.98 \div 3 = \boxed{\$5.99 \text{ each}}$$

$$b) \$6.99 \times 3 = \$20.97 \div 3 = \$6.99 \text{ each}$$

$$c) \$8.99 \times 0.30 = \$2.70 \text{ off} \Rightarrow \$6.29 \text{ each}$$

$$d) \frac{1}{4} \text{ off} = 25\% \text{ off} = \$8.99 \times 0.25 \\ = \$2.25 \text{ off} \Rightarrow \$6.74 \text{ each}$$

- To encourage people to use their credit cards, banks and businesses use promotions and discounts.
 - free gifts/points
 - air miles
 - low interest rates
 - price reductions
 - cash back
- While these may seem like a good deal, you will only save money if you use them wisely.

Example 1.

Justin is buying a new home stereo system for \$2300. The store is having a Grand Opening Sale where everything in the store is 10% off.

- If you apply for the store's credit card you will receive another 15% off of the sale price.
- Interest on the card is 21% /yr, compounded daily.

If Justin plans to pay off the cost on the credit card in 5 months with one payment. How much will he save on the stereo?

$$\$2300 \times 0.10 = \$230 \text{ off} \Rightarrow \$2070.$$

Credit Card 15%:

$$\$2070 \times 0.15 = \$310.50 \text{ off} \Rightarrow \$1759.50$$

$$A = P(1+i)^n$$

$$5 \text{ mo.} \times 30 \text{ d/mo} = 150 \text{ d}$$

$$A = 1759.50 \left(1 + \frac{0.21}{365}\right)^{150}$$

$$A = 1918.04$$

$$I = 1918.04 - 1759.50 = \$158.54 \text{ in interest}$$

Instead of paying \$2300, he pays \$1918.04,

a difference of \$381.96