Section 4 – Home Ownership

- A **mortgage** is a long term loan used to buy a home.
- The **down payment** is the amount of money paid at closing towards the purchase price of a house.
- There are **fixed rate mortgages** (referred to as fixed) meaning the interest rate is fixed for the entire loan period, and **variable rate mortgages** (referred to as ARMs) which vary depending on the market from year to year or even month to month.
- Typically one gets a loan from a **mortgage broker**. This broker gives you the money to purchase the home (minus the down payment) at a given interest rate and charges you a certain fee, known as a **point or points**. One point is one percent of the mortgage amount.
- In addition to the point(s), the buyer has to pay additional **fees** such as courier fees (for mailing), faxing fees, appraisal fee, document preparation fee, etc. All these fees vary by lender.
- The **closing cost** is the total the buyer needs to pay at the time of closing (when you sign all the documents). It is the total of the down payment, points and fees.

We can find the monthly payment using the formula we were given previously. To calculate the monthly payment (principal plus interest) for a home costing $A$ dollars at $i$ % per month for a total of $n$ months, the monthly payment $R$ is given by

$$R = A \times i \div \left(1 - \frac{1}{1 + i^n}\right)$$

**Example:** The price of a home is $195,000. You put 10% down and finance the rest with a 30 year fixed mortgage at 7.5% APR. What is your principal and interest payment, and how much do you pay over the life of the loan?

**Solution:**
- Loan amount = $A = 195,000 – 0.1(195,000) = $175,500
- $i = 0.075/12 = 0.00625$, and $n = 30(12) = 360$
- $R = A \times i \div \left(1 - \frac{1}{1 + i^n}\right) = 175,500 \times 0.00625 \div \left(1 - \frac{1}{1 + 0.00625}^{360}\right) = 1,227.12$

Over the life of the loan you pay $1227.12 for 360 months, which is $441,763.20
- Your interest = 441,763.20 – 175,500 = $266,263.20

By law your loan documents will have this total ($441,763.20), as well as the APR (7.5%).

**Example:** The price of a home is $240,000. The bank requires a 10% down payment and three points at the time of closing. The cost of the home is financed with a 30 year fixed mortgage at 6.5% APR. Find the required down payment, amount of mortgage, amount due to the lender for points, the monthly payment and the total interest.

**Solution:**
- **Down payment** = 10% (240,000) = $24,000
- **Amount of mortgage** = home price – down pmt = 240,000 – 24,000 = $216,000
- **Points** = 3% (216,000) = 6,480
- **Monthly payment** = $R = 216,000 \times 0.00542 \div \left(1 - \frac{1}{1 + 0.00542}^{360}\right) = 1,365.27$
- **Total loan paid** = 360 (1,365.27) = $491,496.10
- **Total interest paid** = 491,496.10 – 216,000 = $275,496.10
When Considering Home Ownership:

- There are many things to consider when qualifying for a mortgage…
  1. Your income
  2. Your debts (do you owe on a car, do you have outstanding credit card bills?)
  3. Your credit rating (are you late paying bills, have you claimed bankruptcy, have you defaulted on a loan before?)

These things combine to give you a credit score. The better your credit score, the better interest rate you will qualify for.

- All these things will be considered when applying for a loan. Depending on the interest rate, most mortgage companies will allow you to stretch to 3 times your debt to income ratio (that is, take your income and subtract your debts, then multiply by 3).

  Example: If I earn $50,000 per year, and owe $1,500 per year on my automobile, and another $500 per year on credit cards, how much can I qualify for?

  Solution: Income – Debts per year = 50,000 – 1,500 – 500 = $48,000

  I could qualify for as much as $144,000 home

- So, if you are considering buying a home the best thing you can do is eliminate all your debts and earn great credit… pay off your credit cards, pay off your car and pay all your bills on time.

- But wait, there’s more… Your mortgage payment consists of more than principal and interest. You also have to pay
  1. Taxes. This can be estimated at 1% of your property’s value per year, but realtors should be able to tell you this with each property you look at
  2. Insurance. This can be estimated at 0.33% per year, but once you have an address you can call any insurance company and they can give you a yearly quote
  3. Flood Insurance. The federal government makes maps that determine if you are in a flood zone. If you are, you have to pay flood insurance. This is not typical in Vegas, but there are places you will need it. Also, you don’t have to be in a flood region if you want to get it anyway.
  4. Mortgage Insurance. If you put less than 15-20% down on a home, the mortgage company considers you ‘risky’ and charges you mortgage insurance, also known as PMI. This rate will vary depending on how much principal you have invested, but it is usually about 0.5% per year.

  Example: What would be an estimate of my total monthly payment on the example above (assume no flood insurance is needed)?

  Recall we had a home worth $240,000 with 10% down, Principal and Interest of $1,365.27

  Solution:

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  \begin{align*}
  \text{Taxes per month} & = 240,000 \times 0.01 / 12 = 200 \\
  \text{Insurance per month} & = 240,000 \times 0.0033 / 12 = 66 \\
  \text{PMI} & = 216,000 \times 0.0052 / 12 = 93.6 \\
  \text{Total Monthly Payment} & = 1,365.27 + 200 + 66 + 93.6 = 1,724.87
  \end{align*}
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