

Lesson Five: Buying a Home – Mortgages

GOALS:

- Solve, using technology, problems specifically related to mortgage loans.

For most people, one of the largest single purchases in their life might be a home. Because of the high cost of purchasing a home, it is important to know some of the terminology involved.

Definitions

Mortgage: A loan taken out to purchase a home is known as a *mortgage*. The home itself is collateral for that loan. This means that the bank can re-possess the home if a person stops paying mortgage payments.

Amortization Period: The amount of time (commonly in years) after which the mortgage will be paid off. Usually 15, 20 or 25 years.

Term: The length of agreement with current bank, typically from 6 months to 5 years. After the term expires, you will need to renegotiate your mortgage.

Mortgage Payment: a regular payment (in set time intervals) that is made to the bank (or other financial institution) that goes towards paying off the mortgage. The mortgage payment itself is made up of two parts: principal and interest.

Principal: the amount still owed on the mortgage. This amount will decrease every time a mortgage payment is made.

Interest: the cost of borrowing money. Over the life of the mortgage, the borrower (the person making the mortgage payments) will pay a significant amount of interest to the bank.

Example 1

Alice and Marnie bought a house for \$215 000 in Riverton, MB. They had saved up a down payment of \$30 000. The bank offers them a 25 year mortgage at 4.5% compounded semi-annually. $c/y = 2$

a) Calculate the monthly payment for this mortgage.

b) Calculate the amount of interest that they will pay over the life of the mortgage.

$$N = 25 \times 12 \checkmark \text{ monthly}$$

$$I = 4.5$$

$$PV = 185000$$

$$PMT = ? - 1023.93$$

$$FV = 0$$

$$P/Y = 12$$

$$C/Y = 2$$

$$PV = \text{mortgage} - \text{down payment} = 185000$$

$$215000 - 30000$$

$$a) \text{ monthly payment} = \$1023.93$$

$$b) \text{ TOTAL payment} - \text{mortgage} = \text{Interest}$$

$$(1023.93 \times 12 \times 25) - 185000$$

$$307179 - 185000 = 122179$$

$$\underline{\$122179}$$