

Real Estate Expenses

◆ To calculate the initial expenses of buying a home

One of the **largest investments** most people ever make is **the purchase of a home**. The **major initial expense** in that purchase is **the down payment**. The amount of **the down payment** is normally a **percent of the purchase price**. This percent varies among banks, but it usually ranges from **5 % to 25 %**.

The Mortgage is the amount that is borrowed to buy real estate. The mortgage amount is the difference between the purchase price and the down payment.

Example 1

A home is purchased for \$ **140,000**, and a down payment of \$ **21,000** is made. **Find the mortgage.**

Purchase price	-	down payment	=	mortgage
140,000	-	21,000	=	119,000

Loan origination fee is a fee that the bank charges for processing the mortgage papers. The loan origination fee is usually a percent of the mortgage and is expressed in points, which is the term banks use to mean percent. For example, “5 points” means “5 percent”.

Points	x	mortgage	=	loan origination fee
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Example 2

A house is purchased for \$**125,000**, and a down payment, which is **20 %** of the purchase price, is made. Find the mortgage.

Strategy

- Find the **down payment** by solving the **basic percent equation** for *amount*.
- Subtract the down payment from the purchase price.

Solution

Percent	x	base	=	amount
Percent	x	purchase price	=	down payment
0.20	x	125,000	=	n
		25,000	=	n
Purchase price	-	down payment	=	mortgage
125,000	-	25,000	=	100,000

The mortgage is \$ 100,000

Example 3

A home is purchased with a mortgage of **\$65,000**. The buyer pays a loan origination fee of $3\frac{1}{2}$ **points**.

How much is the loan origination fee?

Strategy

To find the loan origination fee, solve **the basic percent equation** for *amount*.

Solution

Percent	x	base	=	amount
Points	x	mortgage	=	fee
0.035	x	65,000	=	n
		2275	=	n

The loan origination fee is \$2275.

◆ **To calculate ongoing expenses of owning a home**

The calculation of the monthly mortgage payment is based on the amount of the loan, the interest rate on the loan, and the number of years required to pay back the loan.

Calculating the monthly mortgage is fairly difficult, so tables such as the one in the Appendix are used to simplify these calculations.

Example 4

Find the monthly mortgage payment on a 30-year \$60,000 mortgage at an interest rate of 9%. Use the monthly payment table in the Appendix.

$$60,000 \quad \times \quad \underline{0.0080462} \quad \approx \quad 482.77$$



from the table

The monthly mortgage payment is \$482.77.

Interest on the mortgage

Monthly mortgage payment	-	principal	=	interest
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The **monthly mortgage payment** includes the payment of both **principal** and **interest on the mortgage**.

Example 5

Find the interest paid on a mortgage during a month when the monthly mortgage payment is \$186.26 and \$58.08 of that amount goes toward paying off the principal.

Monthly mortgage payment	-	principal	=	interest
186.26	-	58.08	=	128.18

The interest paid on the mortgage is \$128.18.

Property tax is another ongoing expense of owning a house. Property tax is normally an **annual expense that may be paid on a monthly basis**. The **monthly property tax**, which is determined by **dividing the annual property tax by 12**, is usually **added to the monthly mortgage payment**.

Example 6

A homeowner must pay **\$534** in **property tax annually**. Find the **property tax that must be added each month to the homeowner's monthly mortgage payment**.

$$534 \div 12 = 44.5$$

Each month, \$44.50 must be added to the monthly mortgage payment for property tax.

Example 7

Serge purchased some **land for \$120,000** and made a **down payment of \$25,000**. The savings and loan association charges an **annual interest rate of 8%** on Serge's **25-year mortgage**. Find the **monthly mortgage payment**.

Strategy

To find the monthly mortgage payment:

- Subtract the down payment from the purchase price to find the mortgage.
- Multiply the mortgage by the factor found in the monthly payment table in the Appendix.

Solution

Purchase price	-	down payment	=	mortgage
120,000	-	25,000	=	95,000
95,000	x	<u>0.0077182</u>	≈	733.23
		↓		
		from the table		

The monthly mortgage payment is \$733.23

Example 8

A home has a **mortgage of \$134,000** for **25 years** at an **annual interest rate of 7%**. During a month when **\$375.88** of the monthly mortgage payment is **principal**, **how much of the payment is interest?**

Strategy

To find the interest:

- Multiply the mortgage by the factor found in the monthly payment table in the Appendix to find the monthly mortgage payment.
- Subtract the principal from the monthly mortgage payment.

Solution

$$134,000 \quad \times \quad \frac{0.0070678}{\downarrow \text{from the table}} \quad \approx \quad \frac{947.09}{\downarrow \text{monthly mortgage payment}}$$

Monthly mortgage payment	-	principal	=	interest
947.09		375.88		571.21

Example 9

The **monthly mortgage payment** for a home is **\$598.75**. The **annual property tax** is **\$900**. Find the **total monthly payment for the mortgage and property tax**.

Strategy

To find the monthly payment:

- Divide the annual property tax by 12 to find the monthly property tax.
- Add the monthly property tax to the monthly mortgage payment.

Solution

$$900 \div 12 = 75 \quad (\text{monthly property tax})$$

$$598.75 + 75 = \mathbf{673.75}$$

The total monthly payment is \$673.75