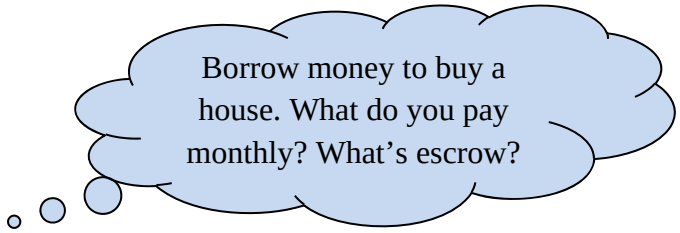


Business Mathematics
Class notes
Real Estate Loans (section 12.5)

The monthly payment for a home loan depends on the amount borrowed (P), the interest rate (R), and the term of the loan (T, time).

The table this section uses will give us the monthly payment (principal plus interest) for every $1,000 borrowed, given the number of years and the interest rate. Here it is.

Real Estate Amortization Table
(Principal and Interest per Thousand Dollars Borrowed)

Terms in Years	4%	4½%	5%	5½%	6%	6½%	7%	7½%	8%	Terms in Years
10	10.12	10.36	10.61	10.85	11.10	11.35	11.62	11.88	12.14	10
15	7.40	7.65	7.91	8.17	8.44	8.71	8.99	9.28	9.56	15
20	6.06	6.33	6.60	6.88	7.16	7.46	7.76	8.06	8.37	20
25	5.28	5.56	5.85	6.14	6.44	6.75	7.07	7.39	7.72	25
30	4.77	5.07	5.37	5.68	6.00	6.32	6.65	7.00	7.34	30

(source: Business Mathematics, Clendenen and Salzman, 14th edition)

To find the **monthly payment** for a home loan, divide the principal needed by $1,000. Multiply that by the table value for the appropriate interest rate and term (in years).

To find the **total amount that will be paid** (over the life of the loan) for the home, multiply this monthly payment by 12 and also by the number of years the loan is for.

The **finance charge** (or total interest to be paid over the life of the loan) is the difference of the total amount paid and the principal.

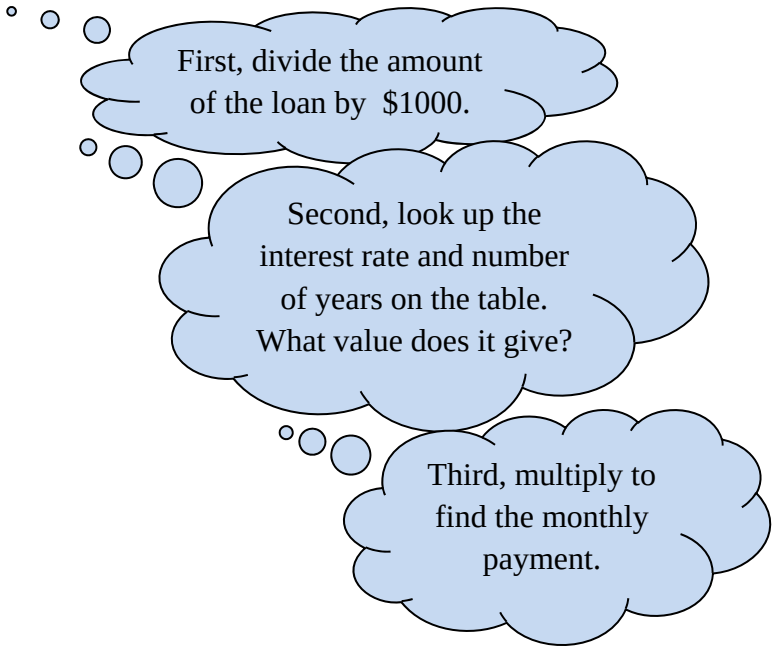
Let's try some examples.

expl 1: Use the real estate amortization table to find the monthly payment for this loan.

Amount of loan: $132,000

Interest rate: 6 ½ %

Term of loan: 25 years



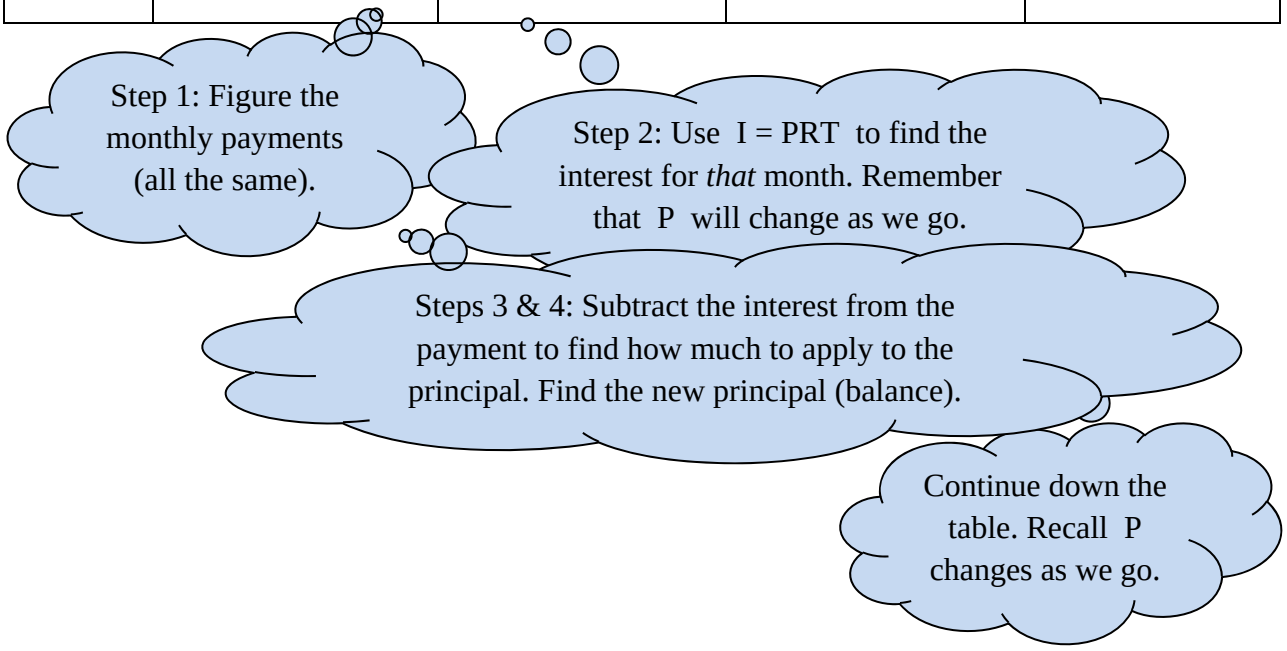
Repayment Schedules:

These are similar to the amortization schedules that we did previously. It will show the monthly payments, broken down into how much goes toward interest (interest payment) and how much goes toward the principal (principal payment), along with the balance after each month.

expl 2: G. Godwyn purchases a tiny home. After a large down payment, he finances $88,600 at 5% for 10 years. Prepare a payment schedule for the first two payments.

Repayment Schedule

Payment number	Total payment	Interest payment	Principal payment	Remaining balance
0	---	---	---	$88,600
1				
2				



Escrow Accounts (aka **Impound accounts):**
Property tax and insurance is calculated for the year and the borrower pays $^{1}/_{12}$ of the total each month. The lender pays these bills for the borrower from these funds.

We will add those amounts to the monthly payment calculated above to figure the true monthly payment needed.

expl 3: Find the total monthly payment including taxes and insurance for the loan.
Amount of loan: $195,000
Interest rate: 5%
Term of loan: 30 years
Annual taxes: $3,920
Annual insurance: $850