



Unit 10 L 2: Monthly Payment and Total Interest

PBJ: Determine the monthly payment, total paid, and total interest

Interest: Is the amount of money paid to a lender for the use of their money.

Since our book is older it is using rates from 5% to 13% which is much higher than now, believe it or not!

-  Average
-  Indiana Average

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Important Formulas

$$\text{Monthly Payment} = \frac{\text{Amt of Mortgage}}{\$1000} \times \text{Monthly payment for \$1,000 loan (From p. 799)}$$

$$\text{Amount Paid} = \text{Monthly Payment} \times \text{Number of payments} \\ (\# \text{ years of loan} \times 12)$$

30 *× 12*

$$\text{Total Interest Charged} = \text{Amount Paid} - \text{Amount of Mortgage}$$

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Example 1

Carol and Adam Burke have applied for an \$80,000.00 mortgage loan at an annual interest rate of 8.00 percent. The loan is for a period of 30 years and will be paid in equal monthly payments that include interest. What is the total amount of interest charged?

STEP 1: Find the monthly payment. (Refer to the Monthly Payment for a \$1,000 Loan table on page 799.)

$$\begin{array}{r} \frac{\text{Amount of Mortgage}}{\$1,000} \times \text{Monthly Payment for \$1,000 Loan} \\ \frac{\$80,000.00}{\$1000.00} \times \$7.34 \\ = \$587.20 \end{array}$$

STEP 2: Find the amount paid.

$$\begin{array}{r} \text{Monthly Payment} \times \text{Number of Payments} \\ \$587.20 \times (12 \text{ months} \times 30 \text{ years}) \\ \$587.20 \times 360 \\ = \$211,392.00 \end{array}$$

STEP 3: Find the total interest charged.

$$\begin{array}{r} \text{Amount Paid} - \text{Amount of Mortgage} \\ \$211,392.00 - \$80,000.00 \\ = \$131,392.00 \text{ total interest} \end{array}$$

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We will be using this table from page 799

Monthly Payment for a \$1,000 Loan							
Interest Rate	Length of Loan in Years						
	10	15	20	25	30	35	40
5.00%	\$10.61	\$ 7.91	\$ 6.60	\$ 5.85	\$ 5.37	\$ 5.05	\$ 4.82
5.50%	10.85	8.17	6.88	6.14	5.68	5.37	5.16
6.00%	11.10	8.44	7.16	6.44	6.00	5.70	5.50
6.50%	11.35	8.71	7.46	6.75	6.32	6.04	5.85
7.00%	11.61	8.99	7.75	7.07	6.65	6.39	6.21
7.50%	11.87	9.27	8.06	7.39	6.99	6.74	6.58
8.00%	12.13	9.56	8.36	7.72	7.34	7.10	6.95
8.50%	12.40	9.85	8.68	8.05	7.69	7.47	7.33
9.00%	12.67	10.14	9.00	8.39	8.05	7.84	7.71
9.50%	12.94	10.44	9.32	8.74	8.41	8.22	8.10
10.00%	13.22	10.75	9.65	9.09	8.78	8.60	8.49
10.50%	13.49	11.05	9.98	9.44	9.15	8.98	8.89
11.00%	13.78	11.37	10.32	9.80	9.52	9.37	9.28
11.50%	14.06	11.68	10.66	10.16	9.90	9.76	9.68
12.00%	14.35	12.00	11.01	10.53	10.29	10.16	10.08
12.50%	14.64	12.33	11.36	10.90	10.67	10.55	10.49
13.00%	14.93	12.65	11.72	11.28	11.06	10.95	10.90

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**Example 1 (I DO): Mortgage \$110,000. Terms: 5.5%
for 30 years.**

a) What is the monthly payment?

$$\frac{\$110,000}{1000} \times 5.68 =$$

$$\boxed{\$624.80}$$

b) What is the total amount paid?

$$\$624.80 \times 12 \times 30 = \$224,928.00$$

c) What is the interest charged?

$$\$224,928 - 110,000 = \boxed{\$114,928.00}$$

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Example 2: (We Do) John Borno is buying a home. He has been given a loan of \$165,000 for 6.5% interest for 25 years. What will John's monthly payment be? What will be the total amount he has to pay? What will be the total interest he is charged?

$$\frac{\$165,000}{1000} \div \times 6.75 = \boxed{\$1,113.75} \text{ monthly pay}$$

$$\$1,113.75 \times 12 \times 25 = \boxed{\$334,125} \text{ total amt}$$

$$\$334,125 - 165,000 = \boxed{\$169,125.00}$$

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Example 3: (I Do)

Gerry and Shirley Jones have agreed to buy a home for ~~\$195,000~~. They have a 20% down payment. Their mortgage terms are for 30 years at 6 percent interest. What is the total interest charged?

$$\$195,000 \times 20\% = \$39,000$$

$$\$195,000 - 39,000 = \underline{\$156,000} \text{ Mortgage}$$

$$\frac{\$156,000}{1000} \times 6.00 = \$936.00 \text{ Monthly pay}$$

$$\$936 \times 12 \times 30 = \$336,960.00$$

$$\$336,960 - 156,000 = \boxed{\$180,960}$$