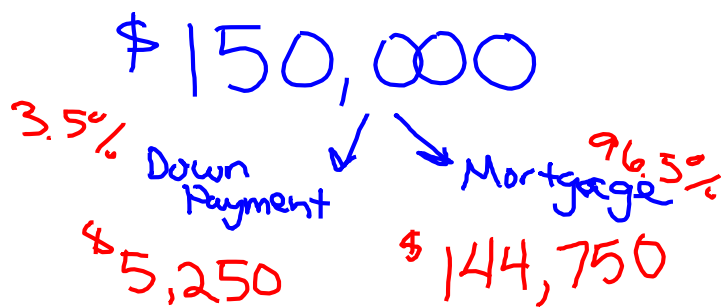


Mortgage Costs

What is a mortgage?

- ▶ A loan used to buy property.
- ▶ Mortgage loans cover up to 96.5% of the cost of the property.
 - You must have at least 3.5% available for a down payment.
 - If you have less than 20% cash to put down, you will also have to pay for PMI.



$$150000 / 100 \times 96.5$$

Private Mortgage Insurance

- ▶ **Private Mortgage Insurance** – Protects banks in case you default on your loan.
 - This is added on TOP of your monthly loan payment.
 - If you get an **FHA loan (3.5% down)**, you will have to pay PMI for your WHOLE LOAN.
 - Unless you refinance. \$\$\$
 - If you have a **Conventional Loan (5% down)**, you pay PMI until you have 20% equity in the home.
 - Equity = cash you get back when you sell.

3.5%
\$1,250

5%
7500

20%
30,000

10-2 Monthly Payment and Total Interest

- ▶ If you know the annual interest rate, the amount of the loan, and the length of the loan, you can use a table to find the monthly payment, total amount paid, and total interest charged.
- ▶ We will be using the table on P. 799 of MBA text

Monthly Payment for a \$1,000 Loan*			
Interest Rate	Length of Loan in Years		
	20	25	30
5.00%	\$6.60	\$5.85	\$5.37
5.50%	6.88	6.14	5.68
6.00%	7.16	6.44	6.00
6.50%	7.46	6.75	6.32
7.00%	7.75	7.07	6.65
7.50%	8.06	7.39	6.99
8.00%	8.36	7.72	7.34
8.50%	8.68	8.05	7.69

*An expanded form can be found in the Appendix on page 799.

10-2 Monthly Payment and Total Interest

- ▶ Formulae we'll be using:

$$\text{Monthly Payment} = \frac{\text{Amount of Mortgage}}{\$1,000} \times \text{Monthly Payment for \$1,000 Loan}$$

Table Value from p. 799

$$\text{Total Amount Repaid} = \text{Monthly Payment} \times \text{Number of Payments}$$

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

10-2 Monthly Payment and Total Interest

- ▶ Example: Carol and Adam have applied for an \$80,000 mortgage loan at an annual interest rate of 8.00%. The loan is an installment loan of 30 years, w/ payments that include interest. What is the total amount of interest they will be charged?

$$\text{Monthly Payment} = \frac{\text{Amount of Mortgage}}{\$1,000} \times \text{Monthly Payment for \$1,000 Loan}$$

$$\text{Amount Paid} = \text{Monthly Payment} \times \text{Number of Payments}$$

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

10-2 Monthly Payment and Total Interest

- ▶ Example: Carol and Adam have applied for an \$80,000 mortgage loan at an annual interest rate of 8.00%. The loan is an installment loan of 30 years, w/ payments that include interest. What is the total amount of interest they will be charged?

$$\text{Monthly Payment} = \frac{\text{Amount of Mortgage}}{\$1,000} \times \text{Monthly Payment for \$1,000 Loan}$$

$$\text{Amount Paid} = \text{Monthly Payment} \times \text{Number of Payments}$$

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

$$M.P. = \frac{80,000}{1000} \times 7.34$$

$$= 80 \times 7.34$$

$$\text{Total Amt. Repaid} = 587.20 \times \overset{\text{years}}{30} \times \overset{\text{mo}}{12} = 587.20 \times 360 = \$211,392$$

$$\text{Interest} = 211,392 - 80,000 = \$131,392$$

total amt repaid

amt borrowed

Holy cow!!! That's more interest than the house was even purchased for!!!

\$200,000
30 years
4.25%



CALCULATE ▶

VIEW REPORT ▶

Monthly payment is \$983.88

Loan information: [-]

Mortgage amount: \$0k \$200k \$500k \$1m
Term in years: 5 15 26 40
Interest rate: 1% 9% 17% 25%

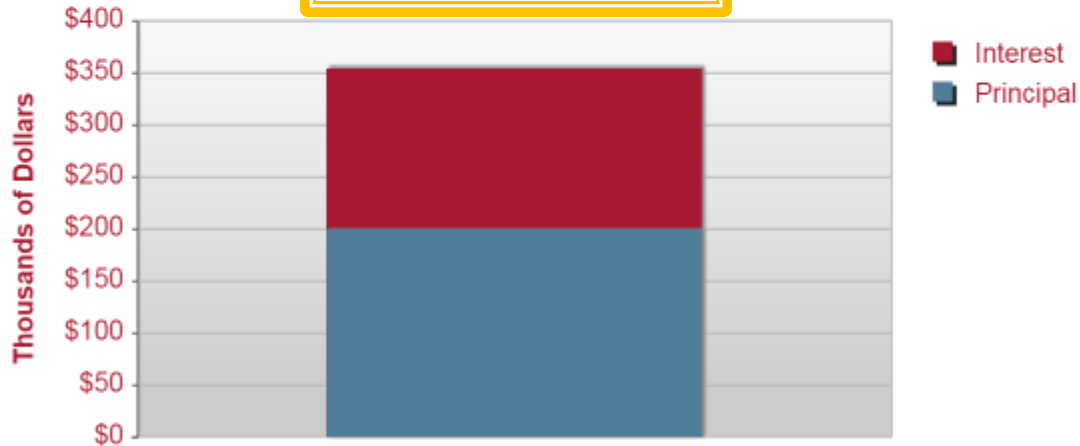
Monthly payment: \$983.88

Report amortization: Annually Monthly

Prepayments: [+]

None

Total Payments \$354,197
Total Interest \$154,197



Mortgage Term [+]

Principal Balances by Year

\$200,000
15 years
4.25%



CALCULATE ▶

VIEW REPORT ▶

Monthly payment is \$1,504.56

Loan information: [-]

Mortgage amount:	<input type="text" value="\$200,000"/>	\$0k	\$200k	\$500k	\$1m
Term in years:	<input type="text" value="15 years"/>	5	15	26	40
Interest rate:	<input type="text" value="4.25%"/>	1%	9%	17%	25%

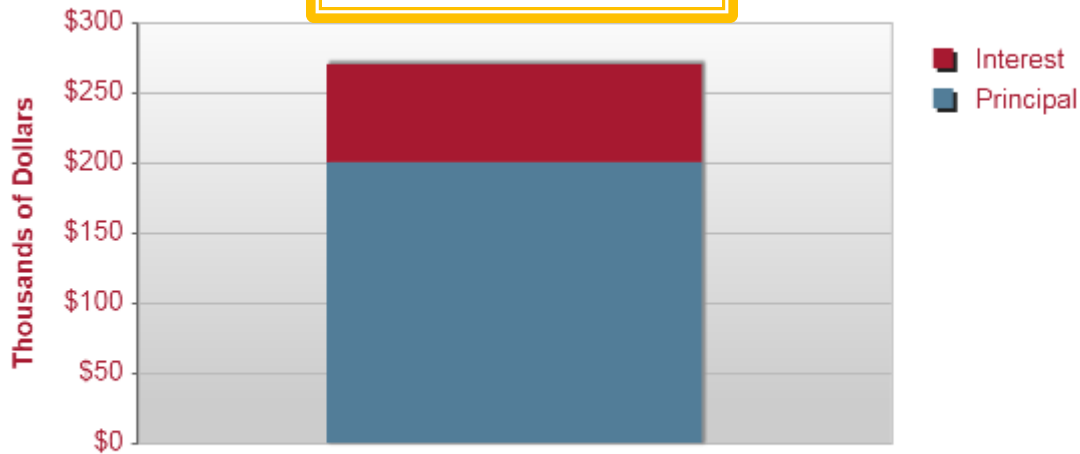
Monthly payment: \$1,504.56

Report amortization: Annually Monthly

Prepayments: [+]

None

Total Payments \$270,820
Total Interest \$70,820



Mortgage Term
Principal Balances by Year

[+]

\$200,000
10 years
4.25%

CALCULATE **VIEW REPORT**

Monthly payment is \$2,048.75

Loan information: [-]

Mortgage amount: \$0k \$200k \$500k \$1m

Term in years: 5 15 26 40

Interest rate: 1% 9% 17% 25%

Monthly payment: **\$2,048.75**

Report amortization: Annually Monthly

Prepayments: [None] [+]

Total Payments \$245,850 [-]
Total Interest \$45,850

The chart displays a single stacked bar representing the total payments. The y-axis is labeled 'Thousands of Dollars' and ranges from \$0 to \$250. The bar is divided into two segments: a blue segment for 'Principal' and a red segment for 'Interest'. The total height of the bar is \$245.85k. The principal portion is \$200k, and the interest portion is \$45.85k.

Category	Amount (Thousands of Dollars)
Principal	200
Interest	45.85
Total Payments	245.85

Mortgage Term [+]
Principal Balances by Year

\$200,000
30 years
8%



CALCULATE ▶

VIEW REPORT ▶

Monthly payment is \$1,467.53

Loan information: [-]

Mortgage amount: \$0k \$200k \$500k \$1m
Term in years: 5 15 26 40
Interest rate: 1% 9% 17% 25%

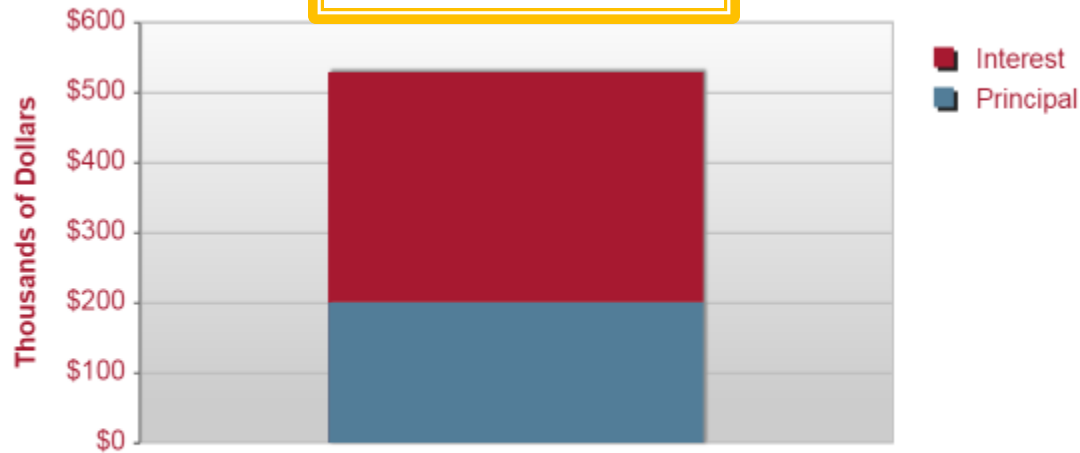
Monthly payment: \$1,467.53

Report amortization: Annually Monthly

Prepayments: [+]

None

Total Payments \$528,310
Total Interest \$328,310



Mortgage Term [+]

Principal Balances by Year

\$200,000
15 years
8%



CALCULATE ▶

VIEW REPORT ▶

Monthly payment is \$1,911.30

Loan information: [-]

Mortgage amount: \$0k \$200k \$500k \$1m
Term in years: 5 15 26 40
Interest rate: 1% 9% 17% 25%

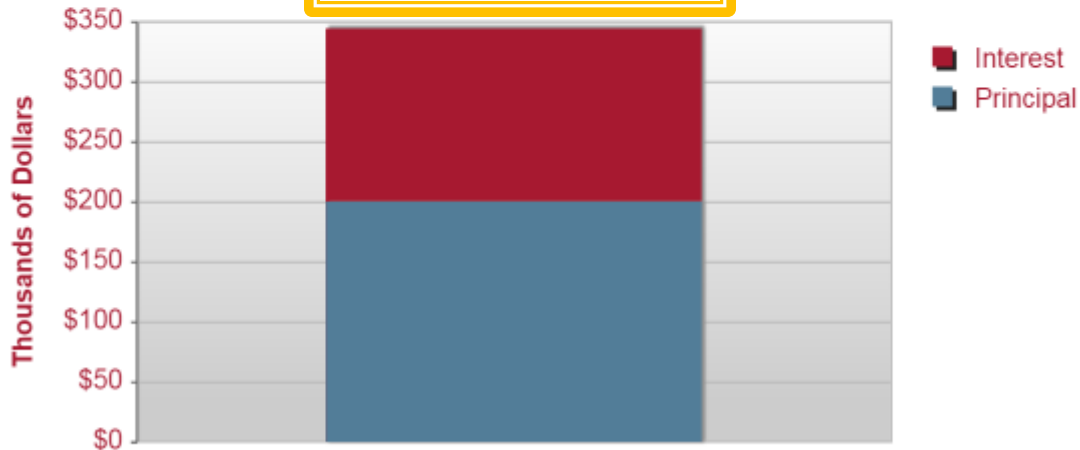
Monthly payment: \$1,911.30

Report amortization: Annually Monthly

Prepayments: [-]

None

Total Payments \$344,035
Total Interest \$144,035



Mortgage Term

Principal Balances by Year

[+]

10-2 Monthly Payment and Total Interest

- ▶ Example: Stephanie and Josh have applied for an \$120,000 mortgage loan at an annual interest rate of 5%. The loan is an installment loan of 15 years, w/ payments that include interest. What is the total amount of interest they will be charged?

$$\text{Monthly Payment} = \frac{\text{Amount of Mortgage}}{\$1,000} \times \text{Monthly Payment for \$1,000 Loan}$$

$$\text{Amount Paid} = \text{Monthly Payment} \times \text{Number of Payments}$$

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

10-2 Monthly Payment and Total Interest

- ▶ Example: Stephanie and Josh have applied for an \$120,000 mortgage loan at an annual interest rate of 5%. The loan is an installment loan of 15 years, w/ payments that include interest. What is the total amount of interest they will be charged?

$$\text{Monthly Payment} = \frac{\text{Amount of Mortgage}}{\$1,000} \times \text{Monthly Payment for \$1,000 Loan}$$

$$\text{Amount Paid} = \text{Monthly Payment} \times \text{Number of Payments}$$

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

Monthly Payment = \$949.20
Total Amount Repaid = \$170,856
Total Interest Paid = \$50,856

$$M.P. = \frac{120,000}{1000} \times 7.91 = \$949.20$$

$$T.A.R. = 949.20 \times \underset{\substack{\text{months} \\ \downarrow \\ \text{per year}}}{12} \times \underset{\substack{\# \text{ of years}}}{15} = 170,856$$

$$T.I.P. = \underset{\substack{\uparrow \\ \text{total repaid}}}{170,856} - \underset{\substack{\uparrow \\ \text{amt} \\ \text{borrowed}}}{120,000} = \$50,856$$

10-3 Closing Costs

At the time you sign the docs transferring ownership of the home to you, the lender charges **closing costs**.

▶ **Closing Costs = Sum of Bank Fees**

- Some lenders charge a flat fee, others charge per item.
- These include fees for lawyers, credit checks, surveys, taxes, and the preparation of the documents.

10-3 Closing Costs

- ▶ Trudy and Germaine have been granted a mortgage loan with an annual interest rate of 8% for 25 years. The home's **selling price** is \$95,000. They need a 15% down payment and the bank will allow them to finance the closing costs as part of the mortgage.
- ▶ What will the mortgage loan amount be? $95,000 / 100 \times 85 = \$80,750$
- ▶ What are the total closing costs? $\$3180.50$ ←
- ▶ What is the actual amount financed with the mortgage?

Closing Costs	
Credit report	\$ 65.00
Loan origination	2% of <u>mortgage</u>
Abstract of title	120.00
Attorney fee	250.00
Documentation stamp	0.3% of <u>mortgage</u>
Processing fee	1.10% of <u>mortgage</u>

	Closing Costs
$\$83,930.50$	
→ 65.00	65.00
$80,750 / 100 \times 2 =$ →	\$ 1615.00
→	120.00
→	250.00
$80,750 / 100 \times .3$ →	242.25
$80,750 / 100 \times 1.1$ →	880.25
	<u>\$3180.50</u>

Assignment Part 3

- ▶ P. 348/ 7 - 13 all
- ▶ P. 350/4 - 6 all