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Terms of a Loan

OBJECTIVES

- Analyze the terms of a loan to make financially responsible decisions.
- Choose loans that cost less money, based on the terms of the loan.
- Choose investments that earn more money, based on the terms of the investment.

NEW KEY TERM

- deferment

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You know how to calculate simple and compound interest.

How can that knowledge help you make decisions about funding your education and making other large purchases?

Getting Started

Coming to Terms with it All

1. What items are included in the terms of a loan?

The first national bank in Texas opened in 1865 in Galveston. It operated under the National Bank Act of 1863 and was the second bank chartered in Texas.

2. How do the terms of a loan you listed relate to the simple interest and compound interest formulas?

3. If two customers go to the same bank to take a loan out for the same amount of money for the same length of time, will they automatically be charged the same interest rate? Explain.



ACTIVITY
2.1

Comparing Loans

Understanding the impact that time and interest have on a loan or investment can help you make good financial decisions. In the previous lesson, you analyzed how compound interest makes an investment or loan grow much more quickly compared to simple interest. The interest rate and length of the loan also determine the amount of money that you pay for a loan. Even a slight difference in loan terms can add up to a lot of money.

1. Carlos and Isaiah are each buying houses just outside of Austin. Carlos has excellent credit, earning him the lowest possible interest rate. Isaiah has a lower credit score—enough to prevent him from qualifying for the best loan terms.

Carlos's Loan

- Loan Amount: \$175,000
- Interest Rate: 4%
- Time: 30 years
- Payment: \$835.48 per month

Isaiah's Loan

- Loan Amount: \$175,000
- Interest Rate: 5%
- Time: 30 years
- Payment: \$939.44 per month

When most people buy a house, they borrow money from the bank. The bank technically owns the house until it is paid off.



- a. Describe the similarities and differences in their loans.

- b. How much more money will Isaiah pay per month?

- c. How much more money will Isaiah pay over the course of a year?

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A home loan is also known as a mortgage. The Texas Land and Mortgage Company of London, Ltd. was the first mortgage company in the state of Texas. The Dallas branch of the English company opened in 1882.

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- d. How much more money will Isaiah pay over 30 years because of the higher interest rate?

A good credit score can help you get the best possible interest rate available. But, interest rates can also vary, depending on the lender and the length of the loan. Shopping around for the best loan terms could save you thousands of dollars.

2. Mei is buying a new car. She is considering two different loan options.

Bank

- Loan Amount: \$20,000
- Interest Rate: 3% interest
- Time: 3 years
- Monthly Payment: \$581.62

Credit Union

- Loan Amount: \$20,000
- Interest Rate: 3% interest
- Time: 6 years
- Monthly Payment: \$303.87

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How can you use the monthly payment to determine how much is paid in one year?

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- a. Describe the similarities and differences in the loans.
- b. How much more money will Mei pay per month for the bank loan?
- c. Determine the total amount Mei will pay taking the bank loan.

d. Determine the total amount Mei will pay taking the credit union loan.

e. How much money will Mei save by choosing the loan with the shortest time?

3. Adriana considers two different loan options when buying a home in Houston.

Local Bank

- Loan Amount: \$135,000
- Interest Rate: 4%
- Time: 15 years
- Monthly Payment: \$998.58

Online Financial Institution

- Loan Amount: \$135,000
- Interest Rate: 5%
- Time: 30 years
- Monthly Payment: \$724.71



a. Adriana claims: "I'm going to save so much money with the online financial institution loan!" Is she correct? Explain your reasoning.

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Review the definition of **explain your reasoning** in the Academic Glossary.
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- b. Identify and explain the advantages and disadvantages of each loan offer.

4. An automobile dealership claims that you can ride home in their best car for only \$299.99 per month. To make a good financial decision, what questions should you ask a salesperson at the dealership?

Loan Deferment

Education is an investment. The idea is that paying for school can pay dividends in the form of a good career with a high salary. Like any investment, the terms of student loans dictate the monthly payments, total time of the loan, and the total amount of money that is paid.

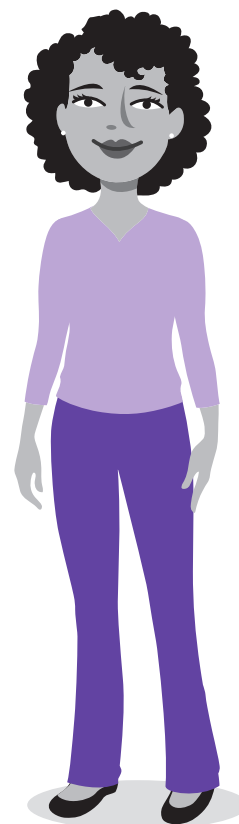
The average college graduate can have over \$20,000 in student loans. Between the time that they graduate and the time they find a job, many students choose a loan *deferment*. A **deferment** is a period of time, usually up to two years, in which students delay paying the principal and interest on their loan. A deferment can be beneficial, but understanding how compound interest affects the principal of a loan will help you make wise financial decisions.

1. Logan graduated with \$35,000 in student loans at a compound interest rate of 6%. He deferred payments for two years while looking for work. Determine the new balance of the loan after two years. Show all of your work and explain your reasoning.

PROBLEM SOLVING



The compound interest formula is $A = P(1 + r)^t$.



2. Angelina has \$51,500 in student loans at a 7% compound interest rate. She has the money to begin paying her loans, but considers spending money in her first two years of work on a car and furniture.
 - a. Determine the additional interest added to her loan after a two-year deferment.
 - b. Identify and explain the advantages and disadvantages of Angelina's deferred payments versus making payments immediately.



Talk the Talk

Mr. & Mrs. Park

Option 1

- Loan Amount: \$150,000
- Interest Rate: 6%
- Time: 25 years
- Monthly Payments: \$932.67

Option 2

- Loan Amount: \$150,000
- Interest Rate: 4%
- Time: 15 years
- Monthly Payments: \$1211.40

Mr. and Mrs. Park disagree over which option to take. Mr. Park wants to take Option 1, and his wife wants to take Option 2. Complete each statement based upon the information provided. Show work to support your numerical responses.

_____ said, "But honey, when our monthly payment is that high, we won't have any extra money in case we have an unexpected expense such as a home repair or if we want to go on vacation."

_____ said, "But dear, we want to have the house paid off before our kids are in college."

Mrs. Park said, "With the option I want, by the time we pay our mortgage off, we will be paying _____ for our home. With the option you want, we will end up paying _____. That means we would be paying _____ more for our house should we choose your way instead of mine!"

Lesson 2 Assignment

Write

Explain what a deferment is in your own words. What are the pros and cons of a deferment?

Remember

Time and interest are two of the most significant factors related to a loan or investment. Even a slight difference in loan terms can add up to a lot of money. Understanding these impacts can help you make the best financial decisions.

Practice

Parker is buying a new boat. He is considering two different loan options.

Bank A

- Loan amount: \$65,000
- Interest Rate: 4.5% interest
- Time: 10 years
- Monthly Payment: \$673.65

Bank B

- Loan amount: \$65,000
- Interest Rate: 4.5% interest
- Time: 15 years
- Monthly Payment: \$497.25

Analyze Parker's loan information.

1. How much more money will Parker pay per month for the loan at Bank A?
2. Determine the total amount Parker will pay if he chooses Bank A.

Lesson 2 Assignment

3. Determine the total amount Parker will pay if he chooses Bank B.
4. How much money will Parker save by choosing the loan with the shortest time?

Use the given information to complete Questions 5–9.

Avery and Valentina are two classmates who are attending the same college. Both have student loans to repay. Their loan information is shown.

Avery's Loan

- Loan Amount: \$45,000
- Interest Rate: 3.5%
- Time: 15 years
- Payment: \$321.70/month

Valentina's Loan

- Loan Amount: \$45,000
- Interest Rate: 5%
- Time: 15 years
- Payment: \$355.86/month

Analyze Avery's and Valentina's loan information.

5. Whose loan has better terms? Explain your reasoning.

Lesson 2 Assignment

6. If Avery and Valentina got their loans from the same bank, why are their interest rates different?

7. Using your answer from Question 5, determine how much more the person with the worse loan will pay over the 15-year time period. Show your work.

After graduating, Avery and Valentina take deferments because they are having difficulty finding jobs. They both take a 2-year deferment.

8. Determine the amount of interest that will be added to Avery's loan during the 2-year deferment. Explain your reasoning.

Lesson 2 Assignment

9. Determine the new balance of Valentina's loan after the deferment.

Prepare

1. Calculate the number of years for which an investment was made when the simple interest is \$832 for a principal of \$5200 at an interest rate of 2%.
2. Calculate the interest rate for a loan when the simple interest earned on a principal of \$9600 was \$2304 on a loan taken for 4 years.