



# Personal Financial Literacy

## CAREERS IN MATH

**Organic Farmer** An organic farmer uses ecological principles to grow and maintain crops and never uses synthetic pesticides or fertilizers. Organic farmers use math to calculate crop yields, business costs, and profits, and to compute how much of a crop to grow on a given piece of land. They also use math to estimate water needs, labor, time to harvest, and amount to plant.

If you are interested in a career as an organic farmer, you should study the following mathematical subjects:

- Basic Math
- Geometry
- Business Math

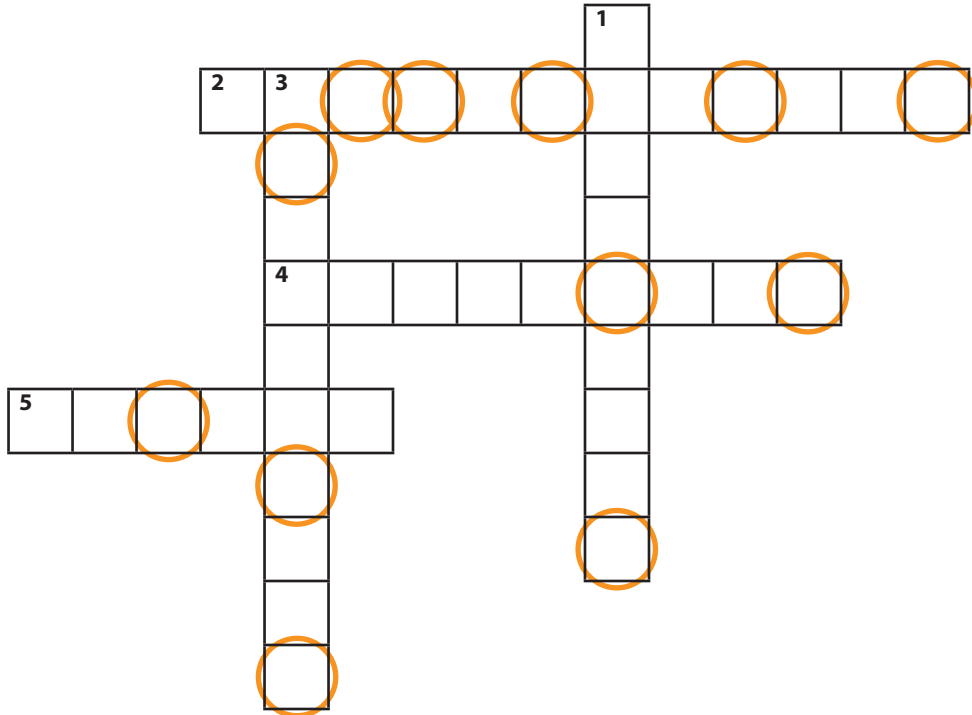
Research other careers that require calculating business costs and profits.

### Unit 7 Performance Task

At the end of the unit, check out how **organic farmers** use math.

# Vocabulary Preview

Use the puzzle to preview key vocabulary from this unit. Unscramble the circled letters within found words to answer the riddle at the bottom of the page.



**Across**

- 2. College funding awards for students based on achievement. (Lesson 16.4)
- 4. Payment card you can use to make purchases, and the money is deducted immediately from a bank account. (Lesson 16.4)
- 5. College funding awards from the government or other organizations, usually for students who need money the most. (Lesson 16.4)

**Down**

- 1. The original amount of money deposited or saved. (Lesson 16.2)
- 3. Payment card you can use to make purchases, then pay a bill at the end of a billing cycle. (Lesson 16.4)

**Q:** Why did the man put his money in the freezer?

**A:** Because he wanted \_\_\_\_\_,  
 \_\_\_\_\_!

# Managing Your Money and Planning for Your Future

MODULE



# 16



## ESSENTIAL QUESTION

How can you manage your money and plan for a successful financial future?



LESSON 16.1

### Repaying Loans

**TEKS** 8.12.A, 8.12.B, 8.12.E

LESSON 16.2

### Saving and Investing

**TEKS** 8.12.C, 8.12.D

LESSON 16.3

### Analyzing Financial Situations

**TEKS** 8.12.E, 8.12.F

LESSON 16.4

### Estimating College Costs and Payments

**TEKS** 8.12.G



my.hrw.com

### Real-World Video

Attending college is a fun way to meet new people and learn new ideas. To pay your tuition, you might use grants, scholarships, savings, loans, or participate in a work-study program

**GO**  
**DIGITAL**  
my.hrw.com



my.hrw.com

Go digital with your write-in student edition, accessible on any device.



Math On the Spot

Scan with your smart phone to jump directly to the online edition, video tutor, and more.



Animated Math

Interactively explore key concepts to see how math works.



Personal Math Trainer

Get immediate feedback and help as you work through practice sets.

# Are YOU Ready?

Complete these exercises to review skills you will need for this module.



**Personal  
Math Trainer**

Online  
Assessment and  
Intervention

## Multiply with Fractions and Decimals

### EXAMPLE

$$\begin{array}{r} 2.53 \\ \times 1.6 \\ \hline 1518 \\ + 253 \\ \hline 4.048 \end{array}$$

Multiply as you would with whole numbers.

Count the total number of decimal places in the two factors.

Write the same total number of decimal places in the product.

**Multiply.**

1. 
$$\begin{array}{r} 4.04 \\ \times 23 \\ \hline \end{array}$$

2. 
$$\begin{array}{r} 6.3 \\ \times 4.3 \\ \hline \end{array}$$

3. 
$$\begin{array}{r} 29.4 \\ \times 5.4 \\ \hline \end{array}$$

4. 
$$\begin{array}{r} 0.45 \\ \times 0.86 \\ \hline \end{array}$$

## Find the Percent of a Number

### EXAMPLE

6.5% of 24

$$\begin{array}{r} 24 \\ \times 0.065 \\ \hline 1.56 \end{array}$$

Write the percent as a decimal.  $6.5\% = 0.065$

Multiply.

**Find the percent.**

5. 4% of 40 \_\_\_\_\_      6. 7% of 300 \_\_\_\_\_      7. 4.3% of 1,200 \_\_\_\_\_

## Use of Parentheses

### EXAMPLE

$$\begin{aligned} 40(1 + 0.08)^2 &= 40(1.08)^2 \\ &= 40(1.1664) \\ &= 46.656 \end{aligned}$$

Perform operations inside parentheses first.  
Simplify exponents.

Multiply.

**Evaluate. Round to the nearest hundredth.**

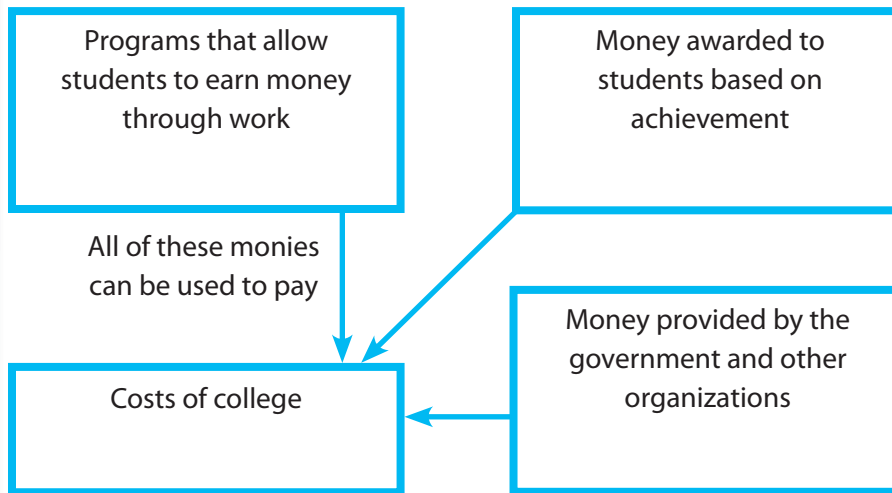
8.  $120(1 + 0.02)^2$  \_\_\_\_\_      9.  $450(1 + 0.05)^2$  \_\_\_\_\_  
10.  $900(1 + 0.03)^2$  \_\_\_\_\_      11.  $75(1 + 0.01)^2$  \_\_\_\_\_

# Reading Start-Up

## Visualize Vocabulary

Use the ✓ words to complete the graphic organizer.  
You will put one word in each box.

### Ways to Pay for College



## Understand Vocabulary

Complete the sentences using the preview words.

1. The amount of money paid by banks and others to use money in an account is \_\_\_\_\_.
2. \_\_\_\_\_ is earned on an annual basis using the formula  $I = Prt$ .

## Vocabulary

### Review Words

- checking account (*cuenta corriente*)
- credit card (*tarjeta de crédito*)
- debit card (*tarjeta de débito*)
- deposit (*depósito*)
- ✓ grants (*becas*)
- principal (*capital*)
- ✓ scholarships (*subvenciones*)
- ✓ tuition (*matrícula*)
- ✓ work-study programs (*programas de trabajo y estudio*)

### Preview Words

- compound interest (*interés compuesto*)
- interest (*interés*)
- simple interest (*interés simple*)

## Active Reading

**Tri-Fold** Before beginning the module, create a tri-fold to help you learn the concepts and vocabulary in this module. Fold the paper into three sections. Label the columns "What I Know," "What I Need to Know," and "What I Learned." Complete the first two columns before you read. After studying the module, complete the third column.





# Unpacking the TEKS

Understanding the TEKS and the vocabulary terms in the TEKS will help you know exactly what you are expected to learn in this module.

## TEKS 8.12

Develop an economic way of thinking and problem solving useful in one's life as a knowledgeable consumer and investor.

### Key Vocabulary

**debit card** (*tarjeta de débito*)

A plastic card used to purchase goods or services. The money is deducted immediately from your bank account.

**credit card** (*tarjeta de crédito*)

A plastic card used to purchase goods or services. You receive a monthly bill, and you will pay interest on the balance.

**simple interest** (*interés simple*)

Interest paid only on the principal.

**compound interest** (*interés compuesto*)

Interest on the principal and interest an account has earned.

## What It Means to You

You will learn how each of the following standards related to 8.12 can help you understand how to manage your money and plan for your future.

**8.12.A** Solve real-world problems comparing how interest rate and loan length affect the cost of credit.

**8.12.C** Explain how small amounts of money invested regularly, including money saved for college and retirement, grow over time.


**8.12.E** Identify and explain the advantages and disadvantages of different payment methods.

**8.12.F** Analyze situations to determine if they represent financially responsible decisions and identify the benefits of financial responsibility and the costs of financial irresponsibility.



Visit [my.hrw.com](http://my.hrw.com) to see all the **TEKS** unpacked.

# LESSON 16.1 Repaying Loans

 **TEKS**  
**Personal financial literacy—8.12.A** Solve real-world problems comparing how interest rate and loan length affect the cost of credit. Also 8.12.B, 8.12.E



## ESSENTIAL QUESTION

How do you calculate the cost of repaying a loan?

## Comparing Interest Rates

How much does it cost to borrow money? When you use a credit card or get a loan from a bank, the cost of borrowing the money depends on two factors. The first is the interest rate that you pay. The second is the time that you take to pay off the total amount.

**Interest** is the money that you pay to borrow money or use credit. The interest rate determines in part the cost of a loan or of purchases on a credit card.



### EXAMPLE 1



 **TEKS** 8.12.A, 8.12.B

- A** In September, Alex charged his textbooks, clothes, and some downloads on his credit card. He received a bill from his credit card company for \$1000. The interest rate on his card is 21%. He is going to pay in 3 monthly payments. He wants to know how much this loan will cost him in interest.

Use an online calculator. Enter these numbers:

Loan amount: \$1000

Loan term: 3 months

Interest rate: 21% per year

*The calculator converts to 0.25 year.*

Click CALCULATE.

Monthly payment: \$345.07

What is Alex's total repayment?

$$\$345.07 \text{ monthly payment} \times 3 \text{ months} = \$1035.21$$

The credit card company loaned Alex \$1000, and he paid \$1035.21 back to the credit card company. What was the cost of this loan?

$$\text{Interest paid} = \$1035.21 - \$1000 = \$35.21$$

*The cost of the loan*

- B** Barry takes out a loan from his bank for \$1000 to buy a bicycle. The interest rate on his loan is 9%. He is going to pay the total amount in 3 monthly payments. Use an online calculator to find the cost of his loan.

What is Barry's total repayment and the cost of his loan?

$$\$338.35 \text{ monthly payment} \times 3 \text{ months} = \$1015.05$$

$$\text{Interest paid} = \$1015.05 - \$1000 = \$15.05$$

*The cost of the loan*



### Math Talk

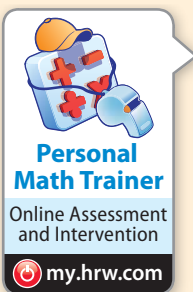


**Mathematical Processes**

In addition to the interest you pay to borrow money, what other costs may there be when you take out a loan?

## Reflect

- What If?** If Alex had saved \$333.34 a month for 3 months, how much money would he have? If he had used his savings instead of his credit card, how much less would his purchases have cost him?  
\_\_\_\_\_
- How much less did Barry's loan, at an interest rate of 9%, cost than Alex's loan at 21%?  
\_\_\_\_\_
- Barry looks into the cost of repaying an easy access loan for \$1000. The up-front cost of the loan is \$3 for every \$20 borrowed, plus Barry will owe \$1000 at the end of the loan. How much will this loan cost Barry?  
\_\_\_\_\_



## YOUR TURN

Use an online calculator to fill in the blanks for the easy access loans.

- |                        |                        |
|------------------------|------------------------|
| 4. Loan amount: \$5000 | Monthly payment: _____ |
| Loan term: 2 years     | Total repayment: _____ |
| Interest rate: 7%      | Interest paid: _____   |
| 5. Loan amount: \$5000 | Monthly payment: _____ |
| Loan term: 2 years     | Total repayment: _____ |
| Interest rate: 21%     | Interest paid: _____   |



## Comparing Loan Lengths

You saw in Example 1 how the interest rate affects the cost of borrowing money. The time taken to repay the loan also affects the cost.

### EXAMPLE 2



**TEKS 8.12.A, 8.12.B**

- A** Susan has a balance of \$1000 on her credit card. She stops using her card and pays the minimum monthly amount until the loan is paid off.

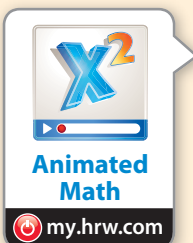
Use an online calculator. Enter these numbers:

Loan amount: \$1000  
Loan term: 93 months  
Interest rate: 18% per year

Click CALCULATE. Monthly payment: \$20.01



© Houghton Mifflin Harcourt Publishing Company • Image Credits: © BananaStock/Jupiterimages/Getty Images





What is Susan's total repayment?

$$\text{\$20.01 monthly payment} \times 93 \text{ months} = \text{\$1860.93}$$

What was the cost of this loan?

$$\text{Interest paid} = \text{\$1860.93} - \text{\$1000} = \text{\$860.93} \quad \textit{The cost of the loan}$$

- B** Laura also has a balance of \$1000 at 18% interest on her credit card. She stops using her card. She wants to pay as much as she can each month to pay off the loan as quickly as she can.

Use an online calculator. Enter these numbers:

Loan amount: \$1000

Loan term: 3 years

Interest rate: 18% per year

Click CALCULATE. Monthly payment: \$36.15

What is Laura's total repayment?

$$\text{\$36.15 monthly payment} \times 36 \text{ months} = \text{\$1301.40}$$

What was the cost of this loan?

$$\text{Interest paid} = \text{\$1301.40} - \text{\$1000} = \text{\$301.40} \quad \textit{The cost of the loan}$$

## Reflect

- 6. What If?** If Susan had put \$20 in her savings account each month, how long would it take her to save a total of \$1000? Compare this to the time she took to pay off her credit card loan of \$1000.

---

---

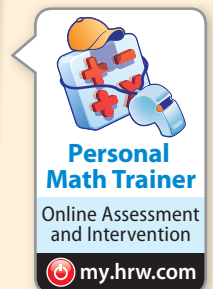
- 7.** Laura paid off her debt in 36 months while Susan took 93 months to pay off her debt of the same amount. How much less did Laura pay in interest than Susan paid?

---

## YOUR TURN

Use an online calculator to fill in the blanks.

- 8.** Loan amount: \$5000      Monthly payment: \_\_\_\_\_  
Loan term: 2 years      Total repayment: \_\_\_\_\_  
Interest rate: 15%      Interest paid: \_\_\_\_\_
- 9.** Loan amount: \$5000      Monthly payment: \_\_\_\_\_  
Loan term: 4 years      Total repayment: \_\_\_\_\_  
Interest rate: 15%      Interest paid: \_\_\_\_\_



## Guided Practice

1. Kyle is going to take out a loan for \$1500 for 2 years. He wants to know how much more it will cost him in interest if he uses his credit card, at 20% interest, instead of borrowing from the bank at 11% interest. Find the difference in the cost of these two choices. (Example 1)

Enter the numbers in an online calculator and fill in the blanks.

### Credit Card

Loan amount: \$ \_\_\_\_\_

Loan term: \_\_\_\_\_ months

Interest rate: \_\_\_\_\_% per year

Monthly payment: \$ \_\_\_\_\_

\$ \_\_\_\_\_  $\times$  24 months =

Total repayment: \$ \_\_\_\_\_

Interest paid: \$ \_\_\_\_\_

### Bank Loan

Loan amount: \$ \_\_\_\_\_

Loan term: \_\_\_\_\_ months

Interest rate: \_\_\_\_\_% per year

Monthly payment: \$ \_\_\_\_\_

\$ \_\_\_\_\_  $\times$  24 months =

Total repayment: \$ \_\_\_\_\_

Interest paid: \$ \_\_\_\_\_

Kyle would pay \$ \_\_\_\_\_ less in interest if he borrows from the bank than if he borrows using his credit card.

2. How much less will Kyle pay in interest if he borrows \$1500 at 11% for 1 year instead of for 2 years? (Example 2)

Monthly payment: \$ \_\_\_\_\_

\$ \_\_\_\_\_  $\times$  \_\_\_\_\_ months = Total repayment: \$ \_\_\_\_\_

Interest paid: \$ \_\_\_\_\_

Kyle will pay \$ \_\_\_\_\_ less for a loan that lasts 1 year instead of 2.



### ESSENTIAL QUESTION CHECK-IN

3. How do you calculate the cost of repaying a loan using an online calculator?

---

---

---


---

---

# 16.1 Independent Practice



**TEKS** 8.12.A, 8.12.B, 8.12.E



**Personal Math Trainer**

Online Assessment and Intervention

[my.hrw.com](http://my.hrw.com)

**Claudia is going to buy a used car for \$10,000. She can finance it at the car dealer for 14% interest, or she can get a loan from the bank at 8% interest for 3 years. If she chooses to finance with the car dealer, she can choose either a 3-year loan or a 5-year loan. Use an online calculator.**



4. Find the amount of Claudia's monthly payment for these choices.
  - a. 14% for 3 years: \_\_\_\_\_
  - b. 14% for 5 years: \_\_\_\_\_
  - c. 8% for 3 years: \_\_\_\_\_
  
5. Find the amount of Claudia's total repayment for these choices.
  - a. 14% for 3 years: \_\_\_\_\_
  - b. 14% for 5 years: \_\_\_\_\_
  - c. 8% for 3 years: \_\_\_\_\_
  
6. Find the amount that Claudia would pay in interest for these choices.
  - a. 14% for 3 years: \_\_\_\_\_
  - b. 14% for 5 years: \_\_\_\_\_
  - c. 8% for 3 years: \_\_\_\_\_
  
7. What is the difference in interest cost between the car dealer loan at 14% for 3 years and the bank loan at 8% for 3 years? \_\_\_\_\_
  
8. What is the difference in interest cost between the car dealer loan for 3 years and the car dealer loan for 5 years? \_\_\_\_\_
  
9. If Claudia wants the lowest possible monthly payment, which option should she choose? \_\_\_\_\_
  
10. If Claudia wants the lowest possible cost for the loan, which option should she choose? \_\_\_\_\_
  
11. **Communicate Mathematical Ideas** With Claudia's loan, does loan length or interest rate have the greater effect on the cost of the interest for the loan? Explain.  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_
  
12. Jess takes out an easy access loan for \$200. The up-front cost of the loan is \$4 for every \$20, plus Jess will owe \$200 at the end of the loan. How much will Jess's total payments be? \_\_\_\_\_



Use an online calculator for 13–16.



- 13. Persevere in Problem Solving** Christopher is thinking about charging a \$2000 computer on his credit card at an interest rate of 21%. He realizes that if he takes  $m$  months to pay off this debt, he will have paid just over twice the original price. What is the value of  $m$ ?

---

- 14. Make a Conjecture** Lara wants to buy a sewing machine so she can sell quilts that she makes. The machine costs \$1500. She is able to save \$200 each month. What advice would you give Lara about how to pay for the machine? Explain.

---

---

---

---

---

---

---

- 15. Multistep** Pat can get a student loan of \$10,000 for 10 years at an interest rate of 7% or borrow the same amount for 5 years at an interest rate of 4%. Which do you think Pat should do and why?

---

---

---

---

---

---

---

- 16. Analyze Relationships** What do you need to know in order to decide which choice is better when you are borrowing money? What do you need to consider when you make your choice?

---

---

---

---

---

---

---

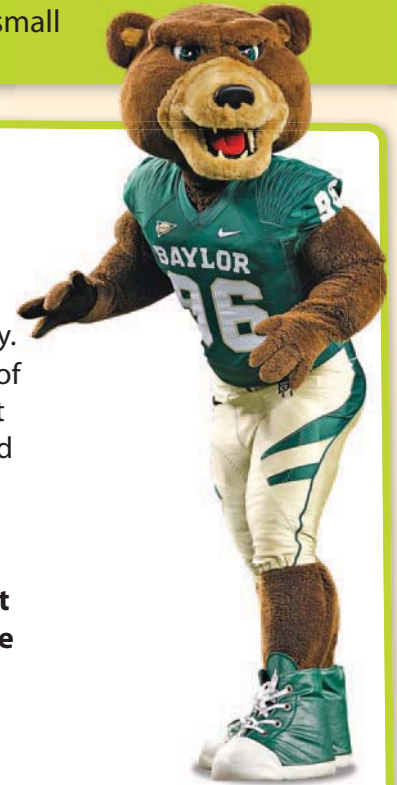
# LESSON 16.2 Saving and Investing

**TEKS** Personal financial literacy—**8.12.D** Calculate and compare simple interest and compound earnings. Also 8.12.C.



## ESSENTIAL QUESTION

How can you save money by investing small amounts of money regularly?



### EXPLORE ACTIVITY 1 8.12.C, 8.12.D

## Calculating Simple Interest

Interest is money paid by banks and others for the use of depositors' money. **Simple interest** is earned using the formula  $I = Prt$ , where  $I$  is the amount of interest,  $P$  is the principal, or the original amount deposited,  $r$  is the interest rate expressed as a decimal, and  $t$  is the time in years. Simple interest is paid at the end of the term based only on the principal at the beginning.

**Adan makes regular deposits to a savings account to save money for college. He deposits \$1000 at the start of each year into an account that pays 4% simple interest at the end of each year. He does not deposit the interest.**

- A** How much interest does Adan's account earn the first year?

$$I = Prt$$

Use the formula for simple interest.

$$I = 1000 \times \boxed{\phantom{00}} \times 1 = \boxed{\phantom{00}}$$

Substitute and simplify.

Adan's account earns \_\_\_\_\_ the first year.

- B** Complete the table to show how the interest earned grows over time.

Deposit phase	Beginning balance for new phase	Amount deposited	New balance	Amount of interest earned (at 4%)
1	\$0	\$1000	\$1000	\$40
2	\$1000	\$1000	\$2000	\$80
3	\$2000	\$1000	\$3000	\$120
4	\$3000	\$1000		
5		\$1000		
6		\$1000		
7		\$1000		
8		\$1000		
9		\$1000		
10		\$1000		

**EXPLORE ACTIVITY 1** (cont'd)**Reflect**

1. How much interest did Adan's account earn from the initial deposit to the end of year 5? from the start of year 6 to the end of year 10? How do these values compare? Explain.

---



---



---

2. What was the total amount saved from the initial deposit to the end of year 5? from the start of year 6 to the end of year 10? Include the amount contributed and the interest.

---

**EXPLORE ACTIVITY 2**

TEKS 8.12.C, 8.12.D

**Calculating Compound Interest**

**Compound interest** is interest paid not only on the principal but also on any interest that has already been earned. Every time interest is calculated, the interest is added to the principal for future interest calculations. The calculation can be made more than once a year, but in this lesson only interest compounded annually will be found.

The formula for compound interest is  $A = P(1 + r)^t$ , where  $P$  is the principal,  $r$  is the interest rate expressed as a decimal,  $t$  is the time in years, and  $A$  is the amount in the account after  $t$  years if no withdrawals were made.

**Lilly makes regular deposits to a savings account to save money for retirement. She deposits \$1000 each year, and her account earns interest compounded annually at a rate of 4%.**

- A** How much interest does Lilly earn the first year?

$$A = P(1 + r)^t \quad \text{Use the formula for compound interest.}$$

$$A = 1000 \times \left(1 + \boxed{\phantom{00}}\right)^1 \quad \text{Substitute.}$$

$$A = \boxed{\phantom{000}} \quad \text{Simplify.}$$

So, Lilly's account earns \_\_\_\_\_ - \$1000 = \_\_\_\_\_ the first year.

- B** Complete the table to show how the amount in the account accumulates over time. Round all values to the nearest cent.

Year	Beginning balance for new year	Amount deposited	New balance	Amount of interest earned (at 4%)	Ending balance
1	\$0	\$1,000	\$1,000	\$40	\$1,040
2	\$1,040	\$1,000	\$2,040	\$81.60	\$2,121.60
3	\$2,121.60	\$1,000	\$3,121.60		
4		\$1,000			
5		\$1,000			
6		\$1,000			
7		\$1,000			
8		\$1,000			
9		\$1,000			
10		\$1,000			

### Reflect

- 3.** How much interest did Lilly's account earn from the initial deposit to the end of year 5? from the start of year 6 to the end of year 10?

---

- 4.** Compare the interest earned during the two five-year periods. Explain the difference.

---



---



---



---

- 5.** Compare the final balance in this Explore Activity to the total amount deposited and earned in interest in Explore Activity 1 (see Reflect question 2). What can you conclude?

---



---



---



Math On the Spot

my.hrw.com

# Comparing Simple and Compound Interest

In this example, you will compare simple and compound interest in a situation where no additional deposits are made.

## EXAMPLE 1



TEKS 8.12.D

Suppose you have two savings accounts, both with a principal of \$100 and an interest rate of 5%, but one earns simple interest and one earns interest compounded annually. Which account will earn more interest after 10 years?

### STEP 1

Find the amount of simple interest earned in 10 years.

$$I = Prt$$

Use the formula for simple interest.

$$I = 100 \times 0.05 \times 10$$

Substitute 100 for  $P$ , 0.05 for  $r$ , and 10 for  $t$ .

$$I = 50$$

Simplify.

The account earning simple interest will earn \$50.

### STEP 2

Find the amount of interest compounded annually earned in 10 years.

$$A = P(1 + r)^t$$

Use the formula for compound interest.

$$A = 100(1 + 0.05)^{10}$$

Substitute 100 for  $P$ , 0.05 for  $r$ , and 10 for  $t$ .

$$A = 162.89$$

Simplify. Round to the nearest cent.

Subtract the principal of \$100 to find the interest earned, \$62.89.

The account earning interest compounded annually will earn \$62.89.

### STEP 3

Compare the interest earned in each account.

The account that earns interest compounded annually earns \$62.89, which is \$12.89 more than the \$50 of simple interest earned.



## YOUR TURN

6. Marlena saved \$50 in an account earning 3.5% simple interest. How much more interest would her account earn in 10 years if her account earned interest compounded annually instead of simple interest?

\_\_\_\_\_



Personal Math Trainer


Online Assessment and Intervention

my.hrw.com




# 16.2 Independent Practice

 **TEKS** 8.12.C, 8.12.D



**Personal Math Trainer**

Online Assessment and Intervention



**1.** Gina deposits \$150 at the start of each year into a college savings account that pays 4% simple interest at the end of each year. She does not deposit the interest she earns each year. How much total interest will Gina earn on her deposits through the end of the fifth year? *(Explore Activity 1)*

\_\_\_\_\_

**2.** Fredo deposits \$75 each year in an account earning 3% interest compounded annually. If he deposits an additional \$75 per year and does not make any withdrawals, how much interest will the account earn in the fourth year? *(Explore Activity 2)*

\_\_\_\_\_

**3.** Huan deposited \$850 into a college savings account earning 4.8% interest compounded annually. He also deposited \$850 into a second account earning 4.8% simple interest. He made no additional deposits. *(Example 1)*

**a.** How much interest does the first account earn in 10 years?

\_\_\_\_\_

**b.** How much interest does the second account earn in 10 years?

\_\_\_\_\_

**c.** After 10 years, which account earned more interest? How much more?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**4.** Andreas invested \$1000 in a savings account. After 4 years, the account had earned a total of \$112 simple interest without any additional deposits. What was his interest rate?

\_\_\_\_\_

**5.** Hei has \$1500 in a retirement account earning 5% interest compounded annually. Each year after the first, she makes additional deposits of \$1500. After 5 years, what was her account balance if she did not make any withdrawals?

\_\_\_\_\_

**6.** Lester deposited \$400 into a savings account earning 4.5% simple interest, and \$450 into an investment account earning 3.2% interest compounded annually. What was the total interest he earned in 3 years? Justify your reasoning.

\_\_\_\_\_

\_\_\_\_\_

**7.** Rande invested \$1000 for college in an account earning 5% simple interest. When she withdrew the investment, she had earned a total of \$550 in interest. How long was the money invested? Justify your reasoning.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

8. **Critical Thinking** Is it possible for an amount of money invested in an account earning simple interest to earn more interest than the same amount of money invested at the same rate in an account earning interest compounded annually? Explain.

---



---



---



---

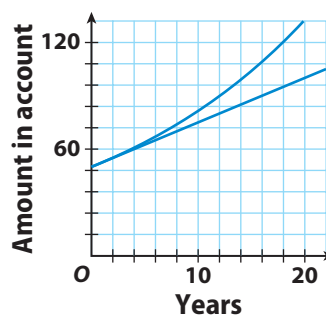


---



**FOCUS ON HIGHER ORDER THINKING**

9. **Multiple Representations** The graph shows how the values of two accounts increase over time. The line represents \$50 invested in an account paying 5% simple interest, and the curve represents \$50 invested in an account paying 5% interest compounded annually. Write an equation for the line and for the curve. Assume no additional deposits were made to either account.



Work Area

10. **Critique Reasoning** Marco says he will earn more interest on his \$100 savings if he gets 4% interest compounded annually than if he gets 5% simple interest. How many years does he have to keep the money in the bank without withdrawing any to be right? Justify your reasoning.

---



---



---



---

11. **Critique Reasoning** Parker invested \$6,500 for 2 years, part at 6% interest compounded annually and part at 5% simple interest. He earned three times as much interest in the account paying compound interest as in the account paying simple interest. Can Parker model this situation using the equation  $x(1 + 0.06)^2 = 3(6500 - x)(0.05)(2)$ , where  $x$  is the initial amount in the 6% account and  $6500 - x$  is the amount in the 5% account? Explain.

---



---



---

# LESSON 16.3 Analyzing Financial Situations

**TEKS** Personal financial literacy—**8.12.F** Analyze situations to determine if they represent financially responsible decisions and identify the benefits of financial responsibility and the cost of financial irresponsibility. Also 8.12.E



## ESSENTIAL QUESTION

How do you analyze financial situations to determine if they represent financially responsible decisions?

### EXPLORE ACTIVITY



**TEKS** 8.12.E

## Exploring Different Payment Methods

There are several ways to pay for goods and services. These payment methods include cash, stored-value cards, debit cards, credit cards, money orders, and checks.



**Research the similarities and differences between stored-value cards, also known as prepaid cards, debit cards, and credit cards.**

- A** Use an Internet search engine to find images of the three types of cards. How are they similar and different in appearance?

---



---



---



---

- B** What information is on each card?

Stored-value card: \_\_\_\_\_

Debit card: \_\_\_\_\_

Credit card: \_\_\_\_\_

- C** When you use a stored-value card, debit card, or credit card, the money you spend is coming from different places. From where is the money deducted when you use each card?

---



---



---



---



---



---



### Math Talk

Mathematical Processes

What are some common uses of stored-value cards?

**EXPLORE ACTIVITY** *(cont'd)*

- D** Do you need to have an account at a bank to have each type of card?

---

---

- E** Research the fees associated with each type of card, such as activation fees, ATM fees, annual fees, and late payment fees. Describe the possible fees associated with each type of payment method.

Stored-value card \_\_\_\_\_

---

Debit card \_\_\_\_\_

---

Credit card \_\_\_\_\_

**Reflect**

1. What are the advantages and disadvantages of using a credit card?

---

---

---

---

2. What are the advantages and disadvantages of using a debit card?

---

---

---

---

**Identify the payment method used in each transaction as a stored-value card, a debit card, or a credit card.**

3. Stan buys a television and pays for it over the next 3 months.

---

4. Ingra buys a cup of coffee, and the money is immediately withdrawn from her bank account. \_\_\_\_\_

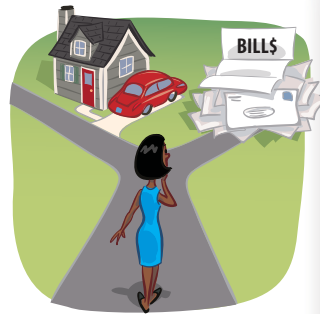
5. Yun used a \$20 bus pass to ride the bus.

---

# Analyzing Situations for Financial Responsibility

Before making a monetary decision, it is important to consider whether your decision is financially responsible or financially irresponsible.

There are benefits to making financially responsible decisions, such as having more money in savings and having no debt or low debt. Financially irresponsible decisions can negatively affect your chance to buy a car, rent an apartment, own a house, and pay for college.



## EXAMPLE 1



TEKS 8.12.F

**Determine if the decision described was financially responsible or financially irresponsible. Explain your answer.**

- A** Katarina had \$100 in cash to spend on a \$55 ink cartridge. When Katarina got to the office supply store, she noticed a sale on ink cartridges, 1 for \$55 or 2 for \$70. She purchased two for \$70.

Katarina made a financially responsible decision.

**Reason 1:** Katarina saved \$40 on the second ink cartridge.

**Reason 2:** She spent cash, so she will not owe money on her purchase.

- B** Melissa is renting an apartment for \$850 a month. In August she had \$2100 in her checking account. She used her credit card to pay rent and spent \$1800 from her savings on a second flat-screen television.

Melissa made a financially irresponsible decision.

**Reason 1:** Melissa had enough money in her checking account to pay rent. Instead, she used her credit card to pay rent and may now have to pay interest on her credit card balance.

**Reason 2:** A second flat-screen television is not a necessity.

## Reflect

6. Don has been saving to buy a used truck for his lawn care business. He has \$5,200 in his business savings account. The truck he wants costs \$6000, and there is a possibility of financing at an interest rate of 7.5%. What financial advice would you give Don?

---

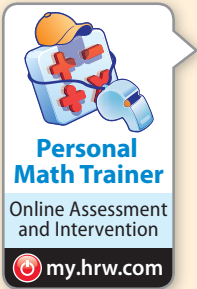
---

---

---

**Math Talk**  
Mathematical Processes

What are some monetary and nonmonetary benefits of making financially responsible decisions?



## YOUR TURN

Tom has \$524 in savings. His car needs new tires. Tom bought new racing tires for his car for \$1400 with his credit card.

7. Was Tom's decision financially responsible or financially irresponsible? Explain your answer.

---

---

8. What could Tom have done differently?

---

## Guided Practice

Identify the payment method used in each transaction as cash, a credit card, a debit card, or a stored-value card. (Explore Activity)

1. Trina received a gift card to an electronics store and used it to buy a video game. \_\_\_\_\_
2. Sue gives \$5 to a street vendor for a necklace. \_\_\_\_\_
3. Steve uses a card and types in his PIN so that his purchase will be withdrawn from his checking account. \_\_\_\_\_



Determine if the decisions described are financially responsible or financially irresponsible. Explain your answers. (Example 1)

4. John was just laid off from his job. He has \$750 in savings. To make himself feel better, he buys a new bike for \$650 with his credit card.

---

---

5. Maria and Pat are recently married and work for the same company. They each pay \$45 per month for health insurance. Pat combined their insurance for a new rate of \$74 per month.

---

---




## ESSENTIAL QUESTION CHECK-IN

6. What are the characteristics of financially responsible decisions?

---

# 16.3 Independent Practice

 **TEKS** 8.12.E, 8.12.F



**Personal Math Trainer**  
Online Assessment and Intervention  
[my.hrw.com](http://my.hrw.com)

**Research the similarities and differences of checks and money orders. Then answer 7–10.**

**7.** What is a check? What is a money order?

---

---

---

---

---

**8.** When someone writes a check, where is the money coming from?

---

---

**9.** When someone pays with a money order, where is the money coming from?

---

---

**10.** Do you think it is more secure to have someone pay you with a check or a money order? Explain.

---

---

---

---

---

**11.** Matt is saving for a new computer. Matt's uncle offers to pay him \$15 an hour to clean out his garage. Matt decides to go play soccer with his friends instead. Do you think Matt made the right decision? Why or why not?

---

---

---

12. Amy owns her own business as a landscaper of homes and office buildings. On average, maintaining a homeowner's yard takes 2 hours per month, and Amy is paid \$300 per month. The office buildings require 35 hours of landscaping per month and pay \$2800 monthly. Which type of client do you think Amy prefers? Explain your answer.

---

---

---



**FOCUS ON HIGHER ORDER THINKING**

13. **Analyze Relationships** Fred and Wilma are buying a house. They have enough money in savings to pay for it directly. However, they have an opportunity to get a loan for the total price of the house at a 3% annual interest rate. They believe they could put their savings into investments that earn 5% annual interest. How should Fred and Wilma pay for their house? Explain.

---

---

---

14. **Critical Thinking** Nikola has received two job offers. The first is for an online company that pays \$20 per hour. The work is interesting and lets him work from home, allowing him to spend more time with his kids. The second offer is at a factory an hour away. It is hard and repetitive work that pays \$25 per hour. Which job should Nikola take? What factors should he consider besides the hourly pay in making his decision?

---

---

---

15. **Critique Reasoning** Elena has learned to analyze whether decisions are financially responsible or not. For all of her future decisions, she plans to choose the option that is most financially responsible. Do you think this is a good idea? Explain.

---

---

---

---

Work Area



# LESSON 16.4 Estimating College Costs and Payments

**TEKS** Personal financial literacy—8.12.G Estimate the cost of a two-year and four-year college education, including family contribution, and devise a periodic savings plan for accumulating the money needed to contribute to the total cost of attendance for at least the first year of college.



## ESSENTIAL QUESTION

How do you estimate the cost of a college education?

### Estimating the Cost of a College Education

The cost of a college education is affected by many factors, such as if you attend school in state or out of state and if you plan to live on campus, off campus, or at home. The total cost of a college education includes the cost of tuition, room and board, and textbooks.



#### EXAMPLE 1



**TEKS** 8.12.G

June wants to attend Texas A&M University-Kingsville, near Corpus Christi, Texas. She is 18, single, does not have any dependents, and lives in Dallas. She was raised by her single father, a contractor who makes \$81,000 per year and pays roughly 12% income tax. For the past 4 years, June has worked part time at the local bookstore, earning a taxable annual income of \$15,000, which is taxed at roughly 8%. June has 2 brothers, both of whom are in middle school.

How much should June expect to spend if she plans on completing a four-year degree program at A&M University-Kingsville while living in on-campus housing?

**STEP 1** Find the cost of attending Texas A&M University-Kingsville for 1 year using the values in the table.

Other costs can include parking, transportation, and entertainment.

Tuition & Fees	\$6,940
Room & Board	\$7,086
Books	\$1,300
Other	\$5,170
<b>Total</b>	<b>\$20,496</b>

**STEP 2** Compute the cost of attending the university for 4 years.

$$\$20,496 \times 4 = \$81,984$$

The estimated cost of June attending for 4 years is \$81,984.

## Reflect

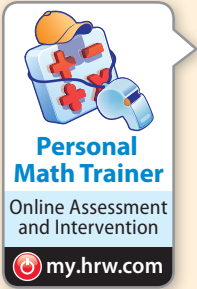
1. How can June help to pay for her education?

---

---

---

---



## YOUR TURN

2. June is also considering attending Del Mar College in Corpus Christi to get a 2-year associate's degree. Estimate the cost of June attending Del Mar College. Use the college's website or another online tool to find the figures for an out-of-district student.

Tuition & Fees	
Room & Board	
Books	
Other	
<b>Total</b>	

---

---

---

3. Suppose June earns an associate's degree from Del Mar and then transfers to Texas A&M University-Kingsville for two more years to complete a bachelor's degree. Estimate the total amount that the 4 years of school will cost.

---

---

---

4. Approximately how much less would it cost June to attend Del Mar for two years and A&M Kingsville for two years than to attend A&M Kingsville for four years?

---

---

# Devising a Savings Plan for College

You can reduce the cost of your college education by applying for grants and scholarships. Another way to lower the cost of a college education is to start a college savings account.

## EXPLORE ACTIVITY



As we saw in Example 1, it will cost June an estimated \$81,984 to attend Texas A&M University-Kingsville for 4 years. Let's apply the savings from June's scholarship, the money her father can contribute to her education, and the funds from her college savings account, to find a more accurate estimated total remaining cost.

- A** June received a scholarship, and has been awarded \$2,000 each year for 4 years. Find the new estimated total cost of June's college education.

After subtracting the funds from the scholarship from the total cost of her college education, what estimated amount will June pay?

---

- B** June's father has put aside \$11,000 for June's college expenses. Find the new estimated total remaining cost of June's education.

After applying her father's contribution to her education expenses, what estimated remaining amount will June pay?

---

- C** At the beginning of each of the 4 years of high school, June put \$4500 of her bookstore income into a savings account. The account earns interest at a rate of 2.5%, compounded annually. Complete the table to find how much June has in her college savings account at the beginning of her freshman year of college.

Year	Beginning balance	Amount deposited	New balance	Amount of interest earned (at 2.5%)	Ending balance
1	\$0	\$4,500	\$4,500	$4,500 \times 0.025 = \$112.50$	\$4,612.50
2					\$9,340.31
3					\$14,186.32
4					\$19,153.48

After applying June's savings to her education expenses, what estimated remaining amount will June pay?

---

**EXPLORE ACTIVITY** (cont'd)

**Reflect**

5. Does June have enough in her savings account to cover her first year at Texas A&M University-Kingsville without help from her father or a scholarship? What about with the scholarship?

---

---

---

---

6. If June had been able to deposit \$5,000 a year instead of \$4,500, earning the same annual interest rate of 2.5%, would she have enough saved to pay for her first year?

---

**Guided Practice**

**Ronan, a 19-year-old male from Texas, has been accepted at the University of Texas at Austin. If he attends the University of Texas, he plans to live at home with his mother, a single parent. His mother is a nurse who makes roughly \$60,000 a year and pays roughly 13% in taxes annually. Ronan has never had a job. (Example 1, Explore Activity)**

1. Use the table and an online tool to estimate the cost of Ronan attending the University of Texas for 1 year.
2. Estimate the cost of Ronan getting a 4-year degree from the University of Texas. \_\_\_\_\_
3. Ronan has been granted a scholarship for \$1,500 per year. His mother has saved \$21,000 for Ronan's college education. Recalculate the estimated remaining cost of Ronan's degree.  
\_\_\_\_\_

Tuition & Fees	
Books	
Other	
<b>Total</b>	



**ESSENTIAL QUESTION CHECK-IN**

4. What are some things to consider when estimating the cost of college?


---

---

---

# 16.4 Independent Practice

 **TEKS 8.12.G**



**Personal Math Trainer**  
Online Assessment and Intervention  
[my.hrwc.com](http://my.hrwc.com)

5. At the beginning of each of the last two years, Laura put \$4800 from her earnings as a part-time cashier during high school into a college savings account earning 1.2% interest compounded annually. Now she is applying for school and needs to know how much she has in her account. Complete the table to determine how much money Laura has saved.

Year	Beginning balance	Amount deposited	New balance	Amount of interest earned (at 1.2%)	Ending balance
1					
2					

6. At the beginning of each of the last three years, Lucas put \$7000 from his earnings as a waiter into a college savings account that earned 1.5% interest compounded annually. Now he wants to attend community college for 2 years without taking out a loan. The cost of college will be about \$18,000. Complete the table to determine whether Lucas has saved enough money to attend a community college.

Year	Beginning balance	Amount deposited	New balance	Amount of interest earned (at 1.5%)	Ending balance
1					
2					
3					

7. Find a college grant online.

a. Grant Name: \_\_\_\_\_

b. Describe the application process.

\_\_\_\_\_

\_\_\_\_\_

c. How much money does the grant award?

\_\_\_\_\_

\_\_\_\_\_

8. Find a college scholarship.

a. Name of Scholarship: \_\_\_\_\_  
\_\_\_\_\_

b. Describe the application process.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

c. How much money does the scholarship award?  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**H.O.T.** FOCUS ON HIGHER ORDER THINKING

Work Area

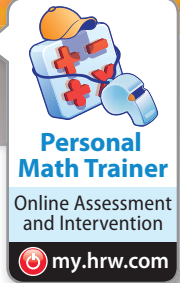
9. **Critical Thinking** Having a savings plan is important even if you are not currently planning on attending college. Describe your savings plan, including stating a goal, how much you plan to save, and how you plan to save your money.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

10. **Make a Conjecture** A CD, or certificate of deposit, is similar to a savings account, but it requires the depositor to leave the money in the account for a fixed period of time. There is a penalty for withdrawing money from the CD before the time period is over. The interest rates on CDs are generally higher than those for savings accounts. When would it be a good idea to put money in a CD to save for college? Would you put all of your savings into a CD? Explain your answer.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# Ready to Go On?



## 16.1 Repaying Loans

Dustin is taking out a loan for \$2000 and wants to know how much money he will save by taking a 2-year loan at 14% interest instead of 20% interest. (Use an online calculator.)

1. What is the total repayment for the 20% loan? \_\_\_\_\_
2. What is the total repayment for the 14% loan? \_\_\_\_\_
3. How much can Dustin save? \_\_\_\_\_

## 16.2 Saving and Investing

4. Cecilia has \$800 in an account earning 4.5% simple interest. How much more interest would her account earn in 7 years with annually compounded interest? \_\_\_\_\_

## 16.3 Analyzing Financial Situations

5. Byron has \$250 in his savings account. He starts a new job next week and spends \$300 on tickets to a sporting event to celebrate. Is his decision financially responsible or financially irresponsible? Explain.

---



---



---

## 16.4 Estimating College Costs and Payments

6. At the beginning of each of the last two years, Alfonso put \$4200 from his earnings as a part-time pizza delivery driver into a college savings account earning 2.4% interest compounded annually. Complete the table to determine how much money Alfonso has saved.

Year	Beginning balance	Amount deposited	New balance	Amount of interest earned (at 2.4%)	Ending balance
1					
2					



### Selected Response

- Which interest rate and time period result in the lowest total loan repayment for a \$4000 loan earning simple interest?
  - (A) 3 years at 11%
  - (B) 3 years at 13%
  - (C) 4 years at 8%
  - (D) 4 years at 11%
- Which equation represents a nonproportional relationship?
  - (A)  $y = -5x$
  - (B)  $y = 5x + 0$
  - (C)  $y = \frac{1}{5}x$
  - (D)  $y = 5x - 5$
- Jemarcus starts with \$1200 in a college savings account. His account earns interest at a rate of 1.8% compounded annually. How much money is in the account after 6 years?
  - (A) \$1221.60
  - (B) \$1265.97
  - (C) \$1329.60
  - (D) \$1335.57
- Which equation relates  $x$  and  $y$  for the set of ordered pairs  $(4, 1)$ ,  $(8, 2)$ ,  $(12, 3)$ ?
  - (A)  $y = \frac{1}{4}x$
  - (B)  $y = 4x$
  - (C)  $y = x - 3$
  - (D)  $y = x - 9$
- Danielle received a gift card to a clothing store and uses it to buy a pair of jeans. Which payment method did she use?
  - (A) cash
  - (B) credit card
  - (C) debit card
  - (D) stored-value card

- Ashley is considering attending the state university to obtain a 4-year bachelor's degree. For one year, the tuition and fees are \$9890, room and board are \$8250, and books are \$680. What will be the total of these costs over the 4 years of obtaining the degree?
  - (A) \$18,140
  - (B) \$18,820
  - (C) \$37,640
  - (D) \$75,280
- Triangle  $ABC$ , with vertices  $A(2, 3)$ ,  $B(4, -5)$ , and  $C(6, 8)$ , is reflected across the  $x$ -axis to form triangle  $A'B'C'$ . What are the coordinates of triangle  $A'B'C'$ ?
  - (A)  $A'(2, -3)$ ,  $B'(4, 5)$ ,  $C'(6, -8)$
  - (B)  $A'(-2, 3)$ ,  $B'(-4, -5)$ ,  $C'(-6, 8)$
  - (C)  $A'(-2, -3)$ ,  $B'(-4, 5)$ ,  $C'(-6, -8)$
  - (D)  $A'(2, -3)$ ,  $B'(4, -11)$ ,  $C'(6, 2)$

### Gridded Response

- A cone-shaped cup has a height of 3 inches and a volume of 9 cubic inches. What is the length in inches of the diameter of the cone? Use 3.14 for  $\pi$ . Round your answer to the nearest hundredth.

				.		
0	0	0	0		0	0
1	1	1	1		1	1
2	2	2	2		2	2
3	3	3	3		3	3
4	4	4	4		4	4
5	5	5	5		5	5
6	6	6	6		6	6
7	7	7	7		7	7
8	8	8	8		8	8
9	9	9	9		9	9



**Managing Your Money and Planning for Your Future****ESSENTIAL QUESTION**

How can you manage your money and plan for a successful financial future?

**Key Vocabulary**

compound interest (*interés compuesto*)

interest (*interés*)

simple interest (*interés simple*)

**EXAMPLE 1**

Clayton has \$5,000 in an account earning simple interest at a rate of 2.5% per year. His wife Candice has \$5,000 in an account earning interest at a rate of 2.3% compounded annually. How much interest did each account earn over 15 years? Which account is worth more after 15 years?

Clayton – Simple Interest

Candice – Compound Interest

$$I = Prt$$

$$A = P(1 + r)^t$$

$$I = \$5,000 \times 0.025 \times 15$$

$$A = \$5,000(1.023)^{15}$$

$$I = \$1,875$$

$$A = \$7,032.42$$

Clayton earned \$1,875 in interest over 15 years for a total of \$6,875 in his savings account. Candice earned \$7,032.42 – \$5,000 = \$2,032.42 in interest for a total of \$7,032.42 in her account. Candice earned more interest and has more money in her savings account.

**EXAMPLE 2**

Lee earns an annual salary of \$42,000. He has \$2,300 in savings and \$1,500 in credit card debt. Lee spends \$1300 for a down payment to replace his truck and takes out a loan with monthly payments of \$525 for the remaining price of the truck. Was Lee's decision financially responsible or financially irresponsible?

Lee made a financially irresponsible decision.

Reason 1: If Lee loses his job, he does not have enough savings to cover his truck payments for more than 1 month.

Reason 2: Lee could have continued driving his current truck and used the money in savings to pay off his credit card debt.

## EXERCISES

1. Sheri is going to take out a loan for \$4,000 that she plans to pay back in 2 years. She wants to know how much more it will cost her in interest if she uses her credit card at 18% interest instead of borrowing from the bank at 10% interest. Both loans require monthly payments. Use an online calculator to find the total repayment for each loan and the difference in the cost of these two choices. (Lesson 16.1)

---

---

2. You are trying to decide which account to put \$3,500 into for the next 6 years. One account has an interest rate of 2.9%, compounded annually. The other account has a simple interest rate of 3.1%. Which account will earn more interest over 6 years, and how much more interest will it earn? (Lesson 16.2)

---

---

3. Maria has \$120 to spend on food for the week. She goes out to a restaurant to eat dinner with her friends and spends \$62 on the meal. Did Maria make a financially responsible decision or a financially irresponsible decision? Explain your answer. (Lesson 16.3)

---

---

4. Use an online tool to estimate the cost for one year at a 4-year university and one year at a 2-year college in Texas. (Lesson 16.4)

	4-year university	2-year college
Tuition & Fees		
Room & Board		
Books		
Other		
Total		

- a. Find the cost of attending the university for four years.

---

---

- b. Find the cost of attending the two-year college and transferring to the university for your final two years of school.

---

---

# Unit 7 Performance Tasks

**1. CAREERS IN MATH Organic Farmer** Carlos is an organic farmer, and his business is doing so well that he is thinking of expanding in the next few years. He decides to start saving for this expansion and is going to put \$8,200 into a savings account. At his credit union, he has two choices for savings accounts: Simple Savers that earns 2% simple interest per year, and Super Savers which earns 1.95% interest, compounded annually.

**a.** How much will Carlos have after 2 years if he chooses the Simple Savers account? Show your work.

---

**b.** How much will Carlos have after 2 years if he chooses the Super Savers account? Show your work.

---

**c.** Which account would you recommend Carlos use and why?

---

---

**d.** If Carlos decides to keep the money in the savings account for 5 years, would you change your recommendation? Why or why not?

---

---

---

**2.** Kay wants a new television. She sees an advertisement in the newspaper for a rent-to-own store, where for \$80 a month she can rent a new television. And, if she rents for 18 months, she will own the television outright. Kay is considering this option, because she doesn't have enough money to purchase a television but she can pay \$80 a month.

**a.** If Kay rents the television for 18 months, how much will she pay in total for the television?

---

**b.** The same television sells for \$429 at an electronics store. How much more will Kay end up paying if she rents the television for 18 months than if she buys it outright?

---

## Unit 7 Performance Tasks (cont'd)

- c. What financially responsible recommendation would you give to Kay about purchasing the television?

---

---

---

---

3. Anastasia is a high school senior who wants to be an architect. She was accepted at a four-year university and was offered a scholarship of \$17,800 per year. The costs per year at this university are shown in the table.

<b>Tuition &amp; Fees</b>	\$17,400
<b>Room &amp; Board</b>	\$10,350
<b>Books and Materials</b>	\$850

She can also attend a community college for the first two years. The tuition for the community college is \$1,150 per year. She would need to rent an apartment and buy her food, which she estimates will cost \$400 a month for the apartment and \$210 a month for food. She would still need to buy books and materials at \$850 a year.

- a. How much will it cost Anastasia to attend the university for all four years of college, assuming she has her scholarship all four years, and she does not pay for housing and food during the summers? Show how you got your answer.

---

---

- b. How much will it cost Anastasia to attend the community college for the first two years, and to attend the university for the last two years? Show your work.

---

---

---

- c. Give one reason in favor of going to the university for her entire college career, and one reason in favor of going two years to the community college and two years to the university.

---

---

---

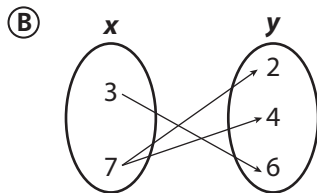
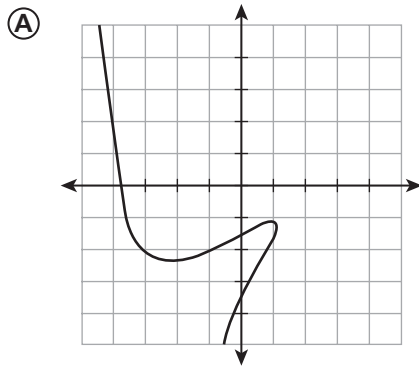


### Selected Response

1. Which interest rate and time period result in the lowest total loan repayment for a \$5,000 loan earning simple interest?

- (A) 3 years at 10%
- (B) 3 years at 13%
- (C) 4 years at 8%
- (D) 4 years at 11%

2. Which of the relations below is a function?



(C) (6, 3), (5, 0), (1, 2), (0, 7), (-1, 6)

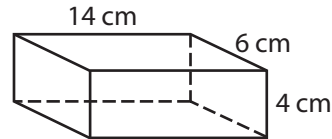
(D)

<b>x</b>	5	6	5	8
<b>y</b>	5	7	9	11

3. Amanda used her PIN to complete a transaction at a department store. Which payment method does this describe?

- (A) gift card
- (B) credit card
- (C) debit card
- (D) personal check

4. What is the surface area of the rectangular prism?



- (A) 160 cm<sup>2</sup>
- (B) 164 cm<sup>2</sup>
- (C) 328 cm<sup>2</sup>
- (D) 392 cm<sup>2</sup>

5. Rianna opens a savings account with \$900. Her account earns interest at a rate of 1.3%, compounded annually. How much money is in the account after 4 years?

- (A) \$46.80
- (B) \$47.72
- (C) \$946.80
- (D) \$947.72



**Some answer choices, called distracters, may seem correct because they are based on common errors made in calculations.**

6. Richard took a handful of pencils from a large box. Out of the 15 pencils in his hand, 4 were glittery. How many glittery pencils should Richard expect to find in the box if there are a total of 240 pencils?

- (A) 16 glittery pencils
- (B) 32 glittery pencils
- (C) 64 glittery pencils
- (D) 96 glittery pencils

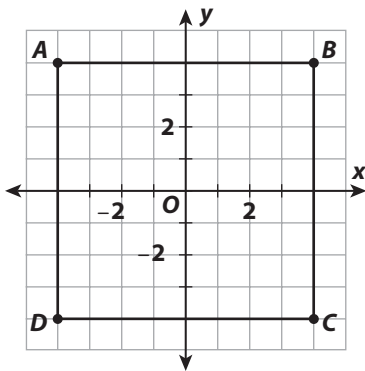
7. Yvonne started running 8 minutes after Cassie started. Cassie was running at a rate of 500 feet per minute. Yvonne was running at a rate of 600 feet per minute. Which equation could you solve to find how long it will take Yvonne to catch up to Cassie?

- (A)  $600t + 3 = 500t$   
 (B)  $600t + 4,800 = 500t$   
 (C)  $500t + 3 = 600t$   
 (D)  $500t + 4,000 = 600t$

8. Leah is planning on attending a public university to earn a four year bachelor's degree. For one year, the tuition and fees are \$10,220, room and board is \$6250, and books are \$540. At these rates, how much should Leah expect four years of school to cost?

- (A) \$16,470  
 (B) \$17,010  
 (C) \$34,020  
 (D) \$68,040

9. The square below is dilated under the dilation  $(x, y) \rightarrow (0.25x, 0.25y)$ .



What are the coordinates of A'?

- (A)  $(-4, -4)$   
 (B)  $(-1, -1)$   
 (C)  $(-2, -2)$   
 (D)  $(4, -4)$

## Gridded Response

10. Fletcher puts \$4,500 in a savings account earning 1.5% interest compounded annually. He does not make any deposits or withdrawals for 3 years. How much interest does the account earn? Round to the nearest cent.

				.		
0	0	0	0		0	0
1	1	1	1		1	1
2	2	2	2		2	2
3	3	3	3		3	3
4	4	4	4		4	4
5	5	5	5		5	5
6	6	6	6		6	6
7	7	7	7		7	7
8	8	8	8		8	8
9	9	9	9		9	9



**Underline key words given in the test question so you know for certain what the question is asking.**

11. Pat puts \$1,310 in a savings account earning 2% simple interest and does not make any deposits or withdrawals for 8 years. How much interest does the account earn?

				.		
0	0	0	0		0	0
1	1	1	1		1	1
2	2	2	2		2	2
3	3	3	3		3	3
4	4	4	4		4	4
5	5	5	5		5	5
6	6	6	6		6	6
7	7	7	7		7	7
8	8	8	8		8	8
9	9	9	9		9	9