5-5 Simple Interest

What You'll Learn

To find simple interest

🔊 **New Vocabulary** principal, simple interest

You will need your notebooks, your calculator/device, and your clicker today.

Why Learn This?

Money may not grow on trees, but it can grow in a bank. When you deposit money, you earn money called interest. When you borrow money, you pay interest on your loan.

The original amount you deposit or borrow is the **principal.** Interest earned only on the principal is **simple interest.**

You can use a formula to calculate simple interest.

KEY CONCEPTS **Simple Interest Formula**

$$I = prt$$

I is the interest earned, p is the principal, r is the interest rate per year, and t is the time in years.

EXAMPLE Finding Simple Interest

1 Gridded Response You borrow $300 for 5 years at an annual interest rate of 4%. What is the simple interest you pay in dollars?

$I = prt$ ← Write the formula.

$I = (300)(0.04)(5) = 60$ ← Substitute.
Use 0.04 for 4%.

The interest is $60.

1 EXAMPLE Find the simple interest on $500 invested at a 3% annual interest rate for 4 years.

$I = prt$ ← Write the formula.

$I = (500)(0.03)(4)$ ← Substitute. Use 0.03 for 3%.

$= 60$ ← Simplify.

The interest is $60.

A   1.   Find the simple interest on a $220 loan at a 5% annual rate for 4 years.
         A. $44.00
         B. $110.00
         C. $440.00
         D. $11.00

A graph can show the increase in interest earned over time.
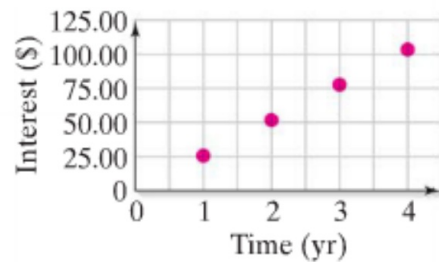
EXAMPLE **Graphing Simple Interest**

2 You have $500 in an account that earns an annual rate of 5.1%. At the end of each year, you withdraw the interest you have earned. Graph the total interest you earn after 1, 2, 3, and 4 years.

Step 1 Make a table.

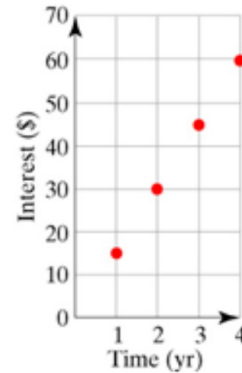| Time (yr)	Interest ($)
1	25.50
2	51.00
3	76.50
4	102.00

Step 2 Draw a graph.

You may want an example in your notebooks to assist you with homework. Copying this down would be a good idea.

2 EXAMPLE Graph the simple interest you earn on $500 at an annual rate of 3% over 4 years.

Step 1 Make a table.
Let t = time.

Time (yr)	Interest ($)
1	15
2	30
3	45
4	60

Step 2 Draw a graph.

Find the simple interest on a $340 loan at 7% annual interest, for three years. $_____

Text in your number answer - No dollar sign is needed as I have it already included above.

Find the simple interest on a $340 loan at 4.6% annual interest, for six years. $_____

Text in your number answer - No dollar sign is needed as I have it already included above.

What is 4.25% equal to in decimal form?

Text in your number answer.

Imagine that you have $7,500 in a college savings account that earns 4.25% simple interest. What will the account balance be at the end of 12 years? $_____

Text in your number answer - no dollar sign needed as it is included above.

Write down the simple interest formula as you will need it for today's homework.

I=prt

interest = principal times rate times time in years

Practice 5-5

Simple Interest

Graph the total *simple* interest earned for each account over 5 years.

1. $1,300 at 6.9%   **2.** $11,500 at 12.50%   **3.** $450 at 3%

Find the simple interest earned in each account.

4. $2,000 at 4% for 6 months   **5.** $10,000 at 10% for 2 years

_____   _____

6. $500 at 3% for 3 months   **7.** $25,000 at 4.25% for 5 years

_____   _____

Compare the loans.

8. Compare two loans for $5,000. The 5-year loan has a 5% simple interest rate. The 6-year loan has a 4% simple interest rate. Which loan costs less? _____

9. You want to borrow $2,000. You can get 3-year loan with a 15% simple interest rate or a 5-year loan with a 10% simple interest rate. Which loan costs less? _____

10. You want to borrow $720. You can get a 2-year loan with an 8% simple interest rate or a 1-year loan with a 15% simple interest rate. Which loan costs less? _____

Solve.

11. You invest $5,000 in an account earning simple interest. The balance after 6 years is $6,200. What is the interest rate?

_____

12. Suppose you have $300 to invest. One bank offers an annual simple interest rate of 4.5% for a 3-year investment. Another bank offers an annual simple interest rate of 6.8% for a 2-year investment. Which account will earn you more money?

_____