Lesson 9-7 *(pp. 499–502)*   Simple and Compound Interest

Lesson Objectives	NAEP 2005 Strand: Number Properties and Operations; Algebra
▼**1** Find simple interest ▼**2** Find compound interest	**Topics:** Ratios and Proportional Reasoning; Algebraic Representations **Local Standards:** _____

Vocabulary and Key Concepts

Simple Interest Formula

$$I = prt$$

I is the interest, p is the principal, r is the annual interest rate, and t is the time in years.

Compound Interest Formula

$$B = p(1 + r)^t$$

B is the balance, p is principal, r is annual interest rate, and t is time in years.

Principal is_____

_____

Simple interest is_____

_____

Compound interest is _____

_____

Balance is   _____

_____

Example

① **Finding Simple Interest** Find the simple interest on $500 invested at a 3% annual interest rate for 4 years.

$I = prt$ ← **Write the formula.**

$I = (500)\left(\boxed{}\right)\left(\boxed{}\right)$ ← **Substitute. Write 3% as a decimal.**

$= \boxed{}$ ← **Simplify.**

The interest is $\boxed{}$.
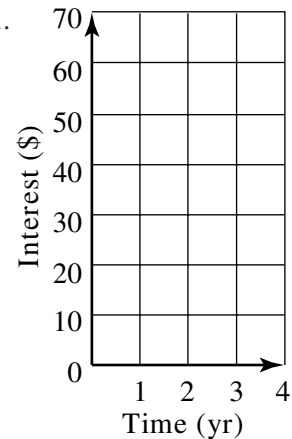
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Examples

❷ Graphing Simple Interest Graph the simple interest you earn on $500 at an annual rate of 3% over 4 years.

Step 1 Make a table.

Time (yr)	Interest ($)
1	15
2	
3	
4	

Step 2 Draw a graph.

❸ You deposit $500 in a bank account that pays 3% interest compounded annually. What is your balance after 4 years?

$B = p(1 + r)^t$ ← **Write the formula.**

$= 500(1 + \boxed{})^4$ ← **Substitute. Use 0.03 for 3%.**

$= 500(\boxed{})$ ← **Use a calculator to simplify the power.**

$= \boxed{}$ ← **Round to the nearest cent.**

The balance after 4 years is $\boxed{}$.

Check Understanding

1. a. Find the simple interest on a $220 loan at a 5% annual rate for 4 years.

  b. Reasoning Of what quantities is interest a function?

2. Graph the simple interest you earn on $950 at an annual rate of 4.2% .

3. You deposit $3,000 in a bank account that pays 4.25% interest compounded annually. What is your balance after 12 years?