

## 7-7 Simple and Compound Interest

simple interest:  $I = prt$

The diagram shows the formula  $I = prt$  with handwritten labels and arrows. An arrow points from the word "interest" to the letter  $I$ . Another arrow points from the word "principle (starting amt.)" to the letter  $p$ . A third arrow points from the word "rate" to the letter  $r$ . A fourth arrow points from the word "time" to the letter  $t$ .

Ex. 1 Find the simple interest for \$2000 invested at 2.5% for 3 years.

$$I = p \cdot r \cdot t$$

$$2000 \cdot .025 \cdot 3 = \$150$$

Find the simple interest for \$4500 invested at 4.25% for 2 years.

$$4500 \cdot .0425 \cdot 2$$
$$\$382.50$$

Ex. 2 Find the simple interest for \$400 invested at 5% for 3 months.

$$I = prt$$

$$400 \cdot 0.05 \times \frac{3}{12} = \$5$$

Find the simple interest for \$1200 invested at 6% for 6 months.

$$1200 \cdot 0.06 \cdot \frac{6}{12} = \$36$$



#### Terms Available

- ◆ 3 months      ◆ 6 months      ◆ 12 months      ◆ 18 months
- ◆ 24 months    ◆ 36 months    ◆ 48 months      ◆ 60 months

The investment certificate receipt reflects the term of deposit.

Minimum opening deposit	\$1,000
Additional deposits	Not permitted
Interest	At maturity
3 month CD (credited)	Quarterly
All other terms (credited & compounded)	
You may choose to have your interest payment transferred to another Associated account or issued by check if your CD account balance is \$5,000 or more.	
Certificate renewal Automatically renews upon maturity	
Grace period The account owner has ten (10) calendar days after maturity to withdraw the funds without penalty. Interest is not paid during the grace period unless the funds from this Certificate of Deposit are deposited into another Associated Bank Certificate of Deposit.	
Early withdrawal penalty CD terms less than twelve (12) months	90 days simple interest
Early withdrawal penalty CD terms twelve (12) months to less than twenty-four (24) months	181 days simple interest
Early withdrawal penalty CD terms twenty-four (24) months to less than thirty-six (36) months	270 days simple interest
Early withdrawal penalty CD terms thirty-six (36) months and longer	365 days simple interest



## Standard Savings Features

[Apply Now](#)

Minimum Opening Deposit <sup>1</sup>	\$25
Monthly Maintenance Fee	<a href="#">Click here for Service Fees</a>
Requirements to Waive Monthly Maintenance Fee <sup>2</sup>	\$300 minimum daily ledger balance or \$1,000 average monthly collected balance.
Interest	<a href="#">View Today's Interest Rates</a>
Check Writing	No
U.S. Bank Overdraft Protection	Can be used as overdraft protection for a U.S. Bank checking account.
ATM Transactions <sup>3</sup>	Free at U.S. Bank ATMs
Access through a U.S. Bank Check Card or ATM Card <sup>4</sup>	Yes
U.S. Bank <sup>®</sup> Internet Banking <sup>5</sup>	Yes
Statement	Quarterly; can be linked to monthly checking statement.
Other <sup>6</sup>	Interest compounded daily, paid quarterly FDIC-insured.

compound interest:

$$A = p \left( 1 + \frac{r}{n} \right)^{nt}$$

rate  $\rightarrow$  time  
 total amount  $\rightarrow$   $A$   
 principle  $\rightarrow$   $p$   
 $\frac{r}{n}$   $\rightarrow$  # of times interest is compounded per year  
 $nt$   $\rightarrow$

annually:  $n=1$ semi-annually:  $n=2$ quarterly:  $n=4$ monthly:  $n=12$ daily:  $n=365$

Ex. 3 Find the compound interest for \$2000 invested at 2.5% compounded annually for 3 years.

$$A = P \left( 1 + \frac{r}{n} \right)^{nt} = 2000 \left( 1 + \frac{.025}{1} \right)^{1 \cdot 3}$$

$$\$ 2153.78 = 2000 (1.025)^3$$

Find the compound interest for \$4500 invested at 4.25% compounded annually for 2 years.

$$4500 \left( 1 + \frac{.0425}{1} \right)^{1 \cdot 2}$$

$$4500 (1.0425)^2 \quad \$ 4890.62$$

Ex. 4 Find the compound interest for \$5000 invested at 6% compounded monthly for 10 years.

Find the compound interest for \$4500 invested at 8% compounded quarterly for 5 years.

Homework  
p.372  
#1-9 & 26-27