

3-4 Explore Compound Interest

Exercises

Round to the nearest cent where necessary.

1. How much interest would \$2,000 earn in one year at the rate of 4.2%?
2. How much interest would \$2,000 earn, compounded annually, in two years at the rate of 4.2%?
3. How much interest would \$2,000 earn, with simple interest, in two years at the rate of 4.2%?
4. Compare your answers to Exercises 2 and 3. Explain why they differ.
5. How much would d dollars earn in one year at the rate of p percent compounded annually?
6. Margaret deposits \$1,000 in a savings account that pays 5.4% interest compounded semi-annually. What is her balance after one year?
7. How much interest does \$5,300 earn at a rate of 2.8% interest compounded quarterly, in three months?
8. Mr. Guny deposits \$4,900 in a savings account that pays $3\frac{1}{2}\%$ interest compounded quarterly.
 - a. Find the first quarter's interest.
 - b. Find the first quarter's balance.
 - c. Find the second quarter's interest.
 - d. Find the second quarter's balance.
 - e. Find the third quarter's interest.
 - f. Find the third quarter's balance.
 - g. Find the fourth quarter's interest.
 - h. Find the fourth quarter's balance.
 - i. How much interest does the account earn in the first year?
9. Jonathan deposits \$6,000 in a savings account that pays 3.2% interest compounded quarterly. What is his balance after one year?
10. How much interest would \$1,000,000 earn at 5% compounded daily, in one day?

11. How much interest would y dollars earn in one day at a rate of 3.75% compounded daily?

12. Mrs. Huber opened a savings account on June 26 with a \$1,300 deposit. The account pays 3.6% interest compounded daily. On June 27, she deposited \$450 and on June 28 she withdrew \$110. Complete the table based on Mrs. Huber's banking activity.

	June 26	June 27	June 28
Opening balance	a.	f.	k.
Deposit	b.	g.	---
Withdrawal	---	---	l.
Principal used to Compute Interest	c.	h.	m.
Interest	d.	i.	n.
Ending Balance	e.	j.	p.

13. Mr. Nolan has a bank account that compounds interest daily at a rate of 3.7%. On the morning of December 7, the principal is \$2,644.08. That day he withdraws \$550 to pay for a snow blower. Later that day he receives a \$934 paycheck from his employer, and he deposits that in the bank. On December 8, he withdraws \$300 to go holiday shopping. What is his balance at the end of the day on December 8?

14. Mrs. Platt has an account that pays p percent interest compounded daily. On April 27, she had an opening balance of b dollars. Also on April 27, she made a w dollars withdrawal and a d dollars deposit. Express her interest for April 27 algebraically.

15. This morning, Mrs. Rullan had a balance of b dollars in an account that pays 3.05% interest compounded weekly. This afternoon she makes a withdrawal in the amount of w dollars. Express her interest for the day algebraically.

16. Kristin deposited \$9,000 in an account that has an annual interest rate of 4.1% compounded monthly. How much interest will she earn at the end of one month?

17. How much would \$25,000 earn in one hour at the rate of 5%, compounded hourly?

18. The Jules Server Scholarship Fund gives a graduation award of \$250 to a graduating senior at North End High School. Currently the fund has a balance of \$8,300 in an account that pays 5.2% interest compounded annually. Will the amount earned in annual interest be enough to pay for the award?

19. Kelly has d dollars in an account that pays 3.4% interest compounded weekly. Express her balance after one week algebraically.