Certificates of Deposit

Vocab:

Certificate of Deposit - a saving account in a bank that earns interest over time.
- might be "locked" for some time.

LESSON 12.1

A14

EXAMPLE 1

Ching-Hsia Chan invests $5,000 in a 1-year CD that earns interest at an annual rate of 4% compounded monthly. Use the *Amount of $1.00 Invested—Daily, Monthly, and Quarterly Compounding* table to determine the interest earned.

Amount of $1.00 Invested—Daily, Monthly, and Quarterly Compounding

Annual Rate	Interest Period—1 Year			Interest Period—4 Years		
	Daily	Monthly	Quarterly	Daily	Monthly	Quarterly
0.50%	1.005012	1.005011	1.005009	1.020201	1.020197	1.020189
0.75%	1.007528	1.007526	1.007521	1.030454	1.030445	1.030426
1.00%	1.010050	1.010046	1.010038	1.040810	1.040793	1.040759
1.25%	1.012578	1.012572	1.012559	1.051270	1.051244	1.051189
1.50%	1.015113	1.015104	1.015085	1.061835	1.061797	1.061717
1.75%	1.017654	1.017641	1.017615	1.072506	1.072453	1.072344
2.00%	1.020201	1.020184	1.020151	1.083285	1.083215	1.083071
2.25%	1.022754	1.022733	1.022691	1.094171	1.094082	1.093898
2.50%	1.025314	1.025288	1.025235	1.105167	1.105056	1.104827
2.75%	1.027881	1.027849	1.027785	1.116273	1.116138	1.115858
3.00%	1.030453	1.030416	1.030339	1.127491	1.127328	1.126992
3.25%	1.033032	1.032989	1.032898	1.138822	1.138628	1.138230
3.50%	1.035618	1.035567	1.035462	1.150266	1.150039	1.149574
3.75%	1.038210	1.038151	1.038031	1.161825	1.161563	1.161023
4.00%	1.040808	1.040742	1.040604	1.173501	1.173199	1.172579
4.25%	1.043413	1.043338	1.043182	1.185293	1.184949	1.184242
4.50%	1.046025	1.045940	1.045765	1.197204	1.196814	1.196015

$5000(1.040742) = \$5203.71$

-5000

$\$203.71$

Complete the problem. Check your answer in the back of the book.

1. Helen Angel invests $7,500 in a 2-year CD that pays 6% compounded quarterly. What is the amount of interest that Helen would earn?

$7500(1.061364) = 7960.23$

$7960.23(1.061364) = \$8448.70$

-7500

$\$948.70$

LESSON 12.1

EXAMPLE 2 Algebra

Compute the interest earned on the CD in **Example 1** using the compound interest formula from Lesson 5.6.

Ching-Hsia Chan invests $5,000 in a 1-year CD that earns interest at an annual rate of 4% compounded monthly.

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

$$A = 5000\left(1 + \frac{0.04}{12}\right)^{(12 \cdot 1)}$$

$$A = \$5203.71$$

$$-5000$$

$$\$203.71$$

LESSON 12.1

Complete the problems to find the amount of interest. Check your answers in the back of the book.

2. A $10,000 CD at 4.50% for 4 years compounded quarterly using the table.

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

$$A = 10000\left(1 + \frac{0.045}{4}\right)^{4 \cdot 4}$$

$$= \$11,960.15$$

$$-10,000$$

$$\$1,960.15$$

LESSON 12.1

Complete the problems to find the amount of interest. Check your answers in the back of the book.

3. A $10,000 CD at 4.50% for 10 years compounded quarterly using the formula.

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

$$A = 10000\left(1+\frac{0.045}{4}\right)^{4\cdot 10}$$

$$= \$15{,}643.77$$

$$-10\,000$$

$$\$5{,}643.77$$

LESSON 12.1

Use the *Amount of $1.00 Invested—Daily, Monthly, and Quarterly Compounding* table on page A14 to complete Problems 4–7.

	Annual Rate	Interest Period	Original Principal	Amount per $1.00	Amount	Interest Earned
4.	5.00%	1 year quarterly	$ 4,500	a.	b.	c.

1.050945

4500(1.050945) = $4729.25

−4500

$229.25