PROBLEM SOLVING WORKSHOP
LESSON 8.5

Using ALTERNATIVE METHODS

Another Way to Solve Example 4, page 522

TEKS a.5, a.6, A.11.C

MULTIPLE REPRESENTATIONS In Example 4 on page 522, you saw how to solve a problem about the value of a collector car over time by using an exponential model. You can also solve the problem by using a spreadsheet.

PROBLEM

COLLECTOR CAR The owner of a 1953 Hudson Hornet convertible sold the car at an auction. The owner bought it in 1984 when its value was $11,000. The value of the car increased at a rate of 6.9% per year.

a. Write a function that models the value of the car over time.

b. The auction took place in 2004. What was the approximate value of the car at the time of the auction? Round your answer to the nearest dollar.

METHOD

Using a Spreadsheet An alternative approach is to use a spreadsheet.

a. The model for the value of the car over time is $C = 11{,}000(1.069)^t$, as shown in Example 4 on page 522.

b. You can find the value of the car in 2004 by creating a spreadsheet.

FORMAT A SPREADSHEET
Format the spreadsheet so that calculations are rounded to 2 decimal places.

STEP 1 **Create** a table showing the years since 1984 and the value of the car. Enter the car's value in 1984. To find the value in any year after 1984, multiply the car's value in the preceding year by the growth factor, as shown in cell B3 below.

	A	B
1	Years since 1984, t	Value, C (dollars)
2	0	11000
3	1	=B2*1.069

STEP 2 **Find** the value of the car in 2004 by using the *fill down* feature until you get to the desired cell.

	A	B
1	Years since 1984, t	Value, C (dollars)
2	0	11000
3	1	11759
...	...	...
21	19	39081.31
22	20	41777.92

▶ From the spreadsheet, you can see the value of the car was about $41,778 in 2004.