PROBLEM SOLVING WORKSHOP
LESSON 8.6

# Using ALTERNATIVE METHODS

TEKS a.5, 2A.10.A, 2A.10.C, 2A.10.D

## Another Way to Solve Example 6, page 592

**MULTIPLE REPRESENTATIONS** In Example 6 on page 592, you solved a rational equation algebraically. You can also solve rational equations using tables and graphs.

**PROBLEM**

**VIDEO GAME SALES** From 1995 through 2003, the annual sales $S$ (in billions of dollars) of entertainment software can be modeled by

$$S(t) = \frac{848t^2 + 3220}{115t^2 + 1000}, \quad 0 \le t \le 8$$

where $t$ is the number of years since 1995. For which year were the total sales of entertainment software about \$5.3 billion?

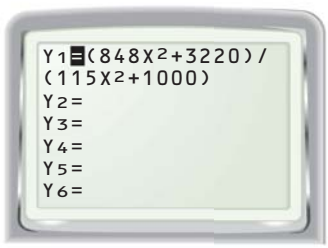
**METHOD 1**

**Using a Table** The problem requires solving the following rational equation:

$$5.3 = \frac{848t^2 + 3220}{115t^2 + 1000}$$

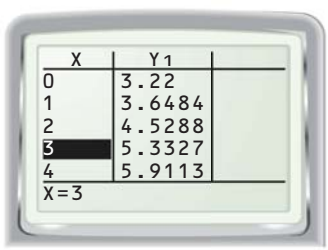
One way to solve this equation is to make a table of values. You can use a graphing calculator to make the table.

**STEP 1** **Enter** the function $y = \frac{848x^2 + 3220}{115x^2 + 1000}$ into a graphing calculator.




**STEP 2** **Set up** a table of values for the function. Start the table at zero so that the first several $x$-values in the table are in the domain of the function. The step value (△Tbl) should represent one entire year.


**STEP 3** **Create** the table of values. You can see that $y \approx 5.3$ when $x = 3$.




▶ Because $x = 3$ represents the number of years after 1995, total sales of entertainment software were about \$5.3 billion in 1998.