

111. **Make a Decision** The table shows the median sales price a_n (in thousands of dollars) of existing one-family homes in the United States from 1987 to 2003. (*Data Source: National Association of Realtors*)

| Year | Median sales price, a_n |
|------|---------------------------|
| 1987 | 85.6 |
| 1988 | 89.3 |
| 1989 | 89.5 |
| 1990 | 92.0 |
| 1991 | 97.1 |
| 1992 | 99.7 |
| 1993 | 103.1 |
| 1994 | 107.2 |
| 1995 | 110.5 |
| 1996 | 115.8 |
| 1997 | 121.8 |
| 1998 | 128.4 |
| 1999 | 133.3 |
| 2000 | 139.0 |
| 2001 | 147.8 |
| 2002 | 158.1 |
| 2003 | 170.0 |

- Use a graphing utility to plot the data. Let n represent the year, with $n = 7$ corresponding to 1987. Do you think the data could be represented by an arithmetic sequence? Explain your reasoning.
- Use the *linear regression* feature of a graphing utility to find an arithmetic sequence for the data.
- Create a table that compares the actual data values with the values given by the linear sequence.
- Does it appear that the model is a good fit for the data? Explain your reasoning.
- Use the sequence from part (b) to estimate the median sales price of a home in 2004 and 2005.
- Use the Internet to find the actual median sales price of a home in 2004 and 2005, and compare these values with estimates from part (e).