

**Project: Net Sales** The table shows the net sales  $a_n$  (in billions of dollars) for Dollar Tree from 2001 through 2014. (Source: Dollar Tree, Inc.)

Year	Net sales, $a_n$
2001	1.99
2002	2.33
2003	2.80
2004	3.13
2005	3.39
2006	3.97
2007	4.24
2008	4.64
2009	5.23
2010	5.88
2011	6.63
2012	7.39
2013	7.84
2014	8.60

Spreadsheet at LarsonPrecalculus.com

- Use a graphing utility to plot the data. Let  $n$  represent the year, with  $n = 1$  corresponding to 2001. Do you think the data could be represented by an arithmetic sequence? Explain your reasoning.
- Use the *linear regression* feature of the graphing utility to find the  $n$ th term of an arithmetic sequence that represents the data.
- Create a table that compares the actual data values with the values given by the arithmetic 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 net sales for Dollar Tree in 2015.
- Use the Internet to find the actual net sales for Dollar Tree in 2015 and compare these values with your estimate from part (e).