College Expenses   The table shows the average undergraduate tuition, room, and board charges y (in dollars) at private degree-granting institutions in the United States from 1990 through 2012. (Data Source: U.S. Department of Education)

DATA Year	Tuition, room, and board charges, y
1990	12,018
1991	12,910
1992	13,892
1993	14,634
1994	15,496
1995	16,207
1996	17,208
1997	18,039
1998	18,516
1999	19,368
2000	20,213
2001	21,373
2002	22,413
2003	23,340
2004	24,624
2005	25,817
2006	26,908
2007	28,439
2008	29,767
2009	30,804
2010	31,023
2011	32,026
2012	33,047

(a) Use a graphing utility to plot the data. Let t represent the year, with $t = 0$ corresponding to 1990. Describe the trend in the data.

(b) Use the technique demonstrated in Exercises 85–88 in Section 7.2 to set up a system of equations for the data. Let t represent the year, with $t = 0$ corresponding to 1990.

(c) Solve the system from part (b) to find the least squares regression line $y = at + b$.

(d) Use a graphing utility to graph the least squares regression line from part (c) and the original data in the same viewing window. How well does the model fit the data? Explain your reasoning.

(e) Use the *regression* feature of the graphing utility to find a linear model for the data. How does this model compare with the model obtained in part (c)?