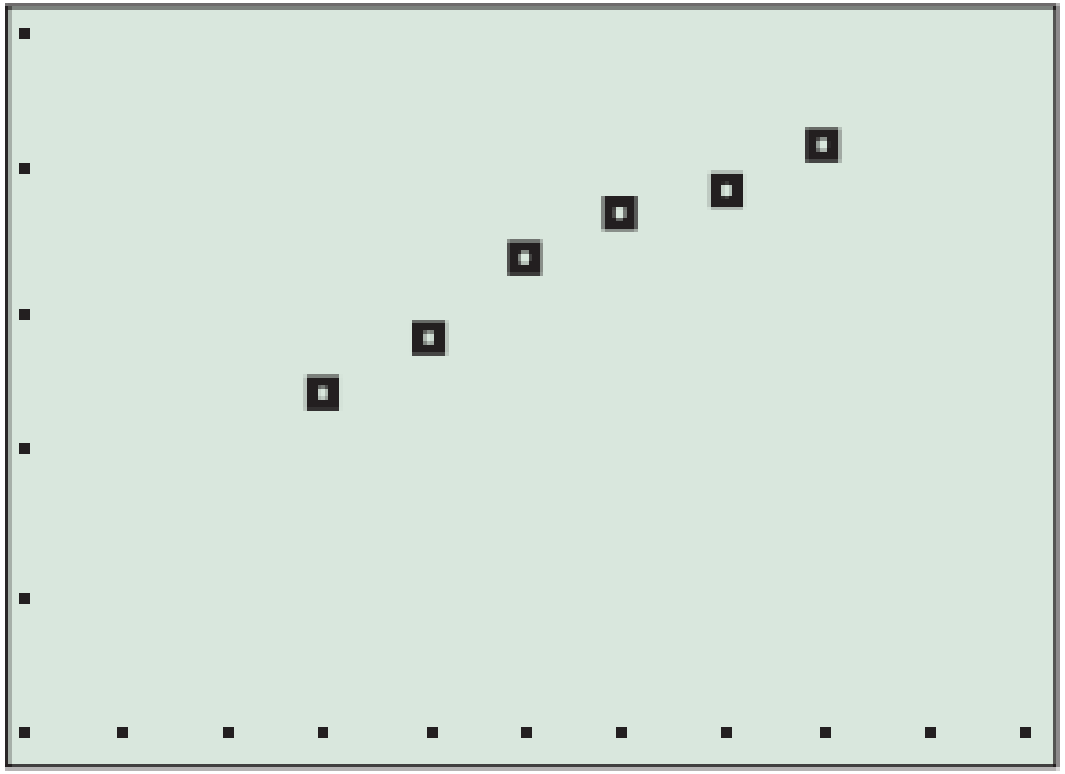
Figure P.30 on page 38 shows Americans' income from 1998 to 2003 in trillions of dollars and a corresponding scatter plot of the data. In Example 8 we model the data in Figure P.30 with a linear equation.

Year	Amount (trillions of dollars)
1998	7.4
1999	7.8
2000	8.4
2001	8.7
2002	8.9
2003	9.2



[1995, 2005] by [5, 10]

Finding a Linear Model for Americans' Personal Income

American's personal income in trillions of dollars is given in Figure P.30.

(a) Write a linear equation for Americans' income y in terms of the year x using the points (1998, 7.4) and (1999, 7.8).

(b) Use the equation in (a) to estimate Americans' income in 2001.

(c) Use the equation in (a) to predict Americans' income in 2006.

(d) Superimpose a graph of the linear equation in (a) on a scatter plot of the data.

53. World Population The midyear world population for the years 1997 to 2004 (in millions) is shown in Table P.7.

Table P.7 World Population

Year	Population (millions)
1997	5852
1998	5930
1999	6006
2000	6082
2001	6156
2002	6230
2003	6303
2004	6377

Source: http://www.census.gov/ipc/www/worldpop.html

(a) Let $x = 0$ represent 1990, $x = 1$ represent 1991, and so forth. Draw a scatter plot of the data.

(b) Use the 1997 and 2004 data to write a linear equation for the population y in terms of the year x. Superimpose the graph of the linear equation on the scatter plot of the data.

(c) Use the equation in (b) to predict the midyear world population in 2006. Compare it with the Census Bureau estimate of 6525.

54. U.S. Exports to Japan The total in billions of dollars of U.S. exports to Japan from 1996 to 2003 is given in Table P.8.

Table P.8 U.S. Exports to Japan

Year	U.S. Exports (billions of dollars)
1996	67.6
1997	65.5
1998	57.8
1999	57.5
2000	64.9
2001	57.4
2002	51.4
2003	52.1

Source: U.S. Census Bureau, Statistical Abstract of the United States, 2001, 2004–2005.

(a) Let $x = 0$ represent 1990, $x = 1$ represent 1991, and so forth. Draw a scatter plot of the data.

(b) Use the 1996 and 2003 data to write a linear equation for the U.S. exports to Japan y in terms of the year x. Superimpose the graph of the linear equation on the scatter plot in (a).

(c) Use the equation in (b) to predict the U.S. exports to Japan in 2006.