The United States Census Bureau tracks statistics on the social, political, and economic organization of the nation. These data are published in the *Statistical Abstract of the United States*, and are also available on the Internet. The Census Bureau gathers the information by taking surveys and accessing other government and private statistical publications. Governments, business, research groups, companies, organizations, and individuals use the information to construct mathematical models that allow them to make predictions about future trends. In this project, you will find a mathematical model for the number of married couples in the United States.

The simplest mathematical model to use to represent a set of real-life data is the line. The number of married couples in the United States in 1996 was 53.6 million. In 2002, the number of married couples grew to 56.7 million.   (Source: U.S. Census Bureau)

a. Write a linear equation that gives the number of married couples in terms of the year. Let x represent the year with $x = 6$ corresponding to 1996.

b. What is the slope of the line?

c. What does the slope of the line tell you about the number of married couples in the United States?

d. Sketch a graph of the line.

Questions for Further Exploration

1. What is the x-intercept of the graph of the line? Does an x-intercept make sense in the context of the data? Explain.

2. The table below shows the actual number of married couples in the United States from 1995 to 2004. Use your model to create a table of values like the one shown.

Year	1995	1996	1997	1998	1999
Number	53.9	53.6	53.6	54.3	54.8

Year	2000	2001	2002	2003	2004
Number	55.3	56.6	56.7	57.3	57.7

3. How do the model values compare with the actual values?

4. Use the model to predict the number of married couples in 2005. How does your prediction compare with the actual number of married couples of 58.0 million in 2005?

5. Do you think a linear model is a good fit for the data from 1995 to 2004? Explain.