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5.7 Model Data from the Internet

TEKS a.5, A.1.B, A.1.E, A.2.D

QUESTION How can you find reliable data on the Internet and use it to predict the total U.S voting-age population in 2010?

EXAMPLE 1 Collect and analyze data

Find data for the total U.S. voting-age population over several years. Use an equation that models the data to predict the total U.S. voting-age population in 2010.

STEP 1 Find a data source

Reliable data about the U.S. population can be found in the online *Statistical Abstract*. Go to the address shown below. Click on a link to the most recent version of the *Statistical Abstract*.

Address http://www.census.gov

STEP 2 Find an appropriate data set

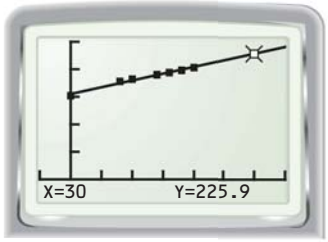
Choose the most recent "Elections" document. In this document, find the table of data entitled "Voting-Age Population."

Voting-Age Population

Year	Total (mil.)
1980	157.1
1988	178.1
1990	182.1
1994	190.3
1996	193.7
1998	198.2

STEP 3 Find a model

Use a graphing calculator to make a scatter plot. Let x represent the number of years since 1980. Let y represent the total U.S. voting-age population (in millions). Find an equation that models the total U.S. voting-age population (in millions) as a function of the number of years since 1980.



▶ $y = 2.23x + 159$

STEP 4 Predict

Use the model to predict the total voting-age population in 2010. You can either evaluate the equation for $x = 30$ or trace the graph of the equation, as shown.

▶ The total U.S. voting-age population will be about 225.9 million in 2010.

DRAW CONCLUSIONS

1. In the online *Statistical Abstract*, find data for the total value of agricultural imports over several years beginning with 1990.
2. Make a scatter plot of the data you found in Exercise 1. Find an equation that models the total value of agricultural imports (in millions of dollars) as a function of the number of years since 1990.
3. Predict the year in which the total value of agricultural imports will be $45,000 million. *Describe* the method you used.