Project: Population The table shows the populations P (in millions) of the United States for selected years from 1790 through 2010. The data can be approximated by the model

$$P = 0.00676t^2 + 0.0072t + 5.911, \quad -10 \le t \le 210$$

where t is the year, with $t = 0$ corresponding to 1800.
(Source: U.S. Census Bureau)

DATA

Spreadsheet at LarsonPrecalculus.com

Year	Population, P
1790	3.929
1800	5.308
1810	7.240
1820	9.638
1830	12.866
1840	17.069
1850	23.192
1860	31.443
1870	39.818
1880	50.189
1890	62.980
1900	76.212
1910	92.228
1920	106.022
1930	123.203
1940	132.165
1950	151.326
1960	179.323
1970	203.302
1980	226.542
1990	248.718
2000	281.425
2010	308.746

(a) Use a graphing utility to plot the data and graph the model in the same viewing window.

(b) Judging from the graph, would you say that the model was a good representation of the population? Explain your reasoning.

(c) Use the model to find when the population of the United States reached 50 million, 100 million, and 200 million. Verify your answers using your graph from part (a).

(d) Use the model to find when the population will exceed 330 million. Does your answer seem reasonable?

(e) Use the Internet to find if the present U.S. population is over 330 million. Compare your answer with your answer from part (d).