

Revised Exercise 17 on page 80 of the yellow [C & H] text.

Use the data below rather than the graph in Figure 1 on p. 17.

U.S. National Censuses Figures 1790-1900

Year	Years Since 1790	Resident Population (in thousands)
1790	0	3929
1800	10	5308
1810	20	7240
1820	30	9638
1830	40	12866
1840	50	17069
1850	60	23192
1860	70	31443
1870	80	39818
1880	90	50156
1890	100	62948
1900	110	75995

- Construct a graph representing the data in the table. Place appropriate titles and labels on the graph.
- Construct a table similar to the one in Exercise 8 on p. 71 and consider each decade's average annual rate of change and each decade's percent change.
- Develop both a linear model and an exponential model approximately relating the U.S. resident population, $P(t)$, to the number of years since 1790 over the 110-year period. Comment on how well the two models fit the data.
- Use your models to estimate the size of the U.S. resident population in 1910, 1940, and 2000. Look up the official census figures for those years to determine the accuracy of the estimates derived from your models. Comment on factors affecting the accuracy of your estimates.