

F-LE U.S. Population 1790-1860

Task

U.S. Population 1790 - 1860			
Year	Population (in thousands)	Change in Population (in thousands)	Successive Population Quotients
1790	3929	----	----
1800	5308	$5308 - 3929 = 1379$	$\frac{5308}{3929} \approx 1.351$
1810	7240	$7240 - 5308 = 1932$	$\frac{7240}{5308} \approx 1.364$
1820	9638		
1830	12,866		
1840	17,069		
1850	23,192		
1860	31,443		

Source:

http://en.wikipedia.org/wiki/Demographic_history_of_the_United_States#Historical_popula

- Complete the table. In the fourth column, round to the thousandths place.
- Would a linear function be an appropriate model for the relationship between the U.S. population and the year? Explain why or why not.
- Would an exponential function be an appropriate model for the relationship between the U.S. population and the year? Explain why or why not.

- d. Heather decides to use an exponential function of the form $y = a \cdot b^x$ to model the relationship. She chooses 1.359 for the value of b . What meaning does this value have in the context of these data?
- e. Use Heather's base value and the population in 1860 to predict the U.S. population in the year 1900.



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