

Linear vs Exponential: Visitors to Iceland

The following data on the number of international visitors to Iceland, $V(t)$ is from the June 2017 Icelandic Tourist Board report, where t is the number of years since 2010

Source: <https://www.ferdamalastofa.is/en/research-and-statistics/tourism-in-iceland-in-figures>

Year	2010	2011	2012	2013	2014	2015	2016
Visitors (in 1000s)	488.6	565.6	672.8	807.3	997.3	1289.1	1791.4

1. In the space above, calculate the difference in visitors between successive years. Then calculate the ratios of visitors between successive years.
2. Is the data more likely to be linear or exponential? Why?
3. Let t be the number of years since 2010. Use exponential regression (with all available data points) to find a suitable model of visitors to Iceland, $V(t)$, for annual exponential growth. Plot the data and the regression model to verify that the model looks appropriate.
4. Use the exponential regression model to predict the number of tourists expected in Iceland in 2020.
5. Use the exponential regression model to estimate the year when the number of visitors to Iceland will be 3 million.