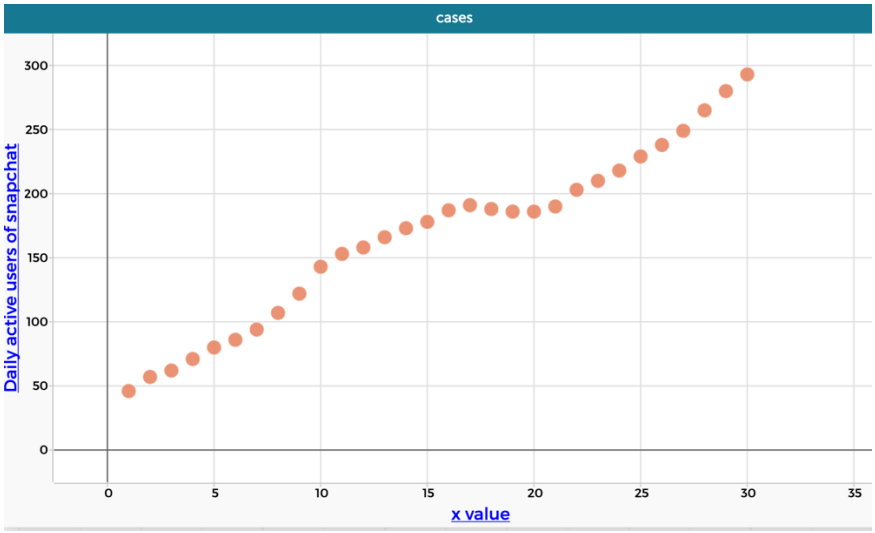
2.2 Practice

Question 1:
The scatterplot below represents the daily active users of snapchat from 2014 – 2021 in the thousands. For the independent variable, x, each value represents the quarter and the year starting in 2014. For example: x = 1 represents Q1 2014, x = 2 represents Q2 2014, x = 3 represents Q3 2014, x = 4 represents Q4 2014, x = 5 represents Q1 2015 etc.



a) Create a model for the data in the scatterplot using the x-value (quarter and year) as your independent variable and daily active users of snapchat as your dependent variable. Show all of the work that leads to your analysis.

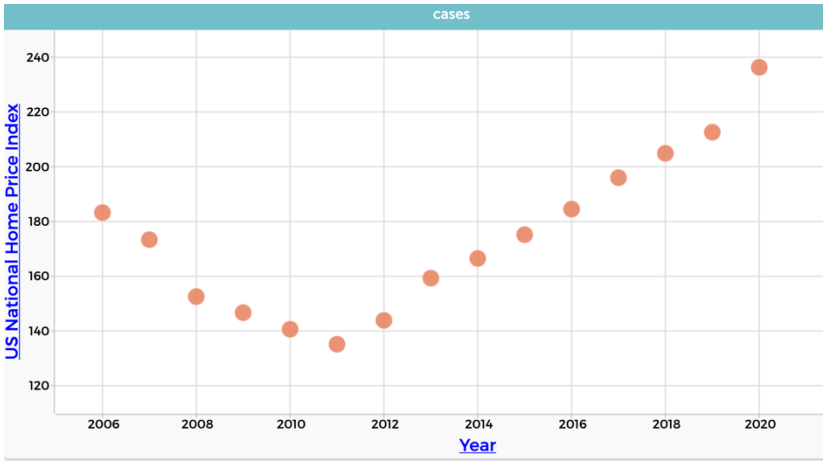
b) Based on your model, how many daily active users of snapchat are there predicted to be in Quarter 1 of 2030?

c) Based on your model, in what quarter and year will there be 700 thousand daily active users of snapchat?

Question 2:

The scatterplot below represents the US National Home Price Index in thousands of dollars in each year from 2006 to 2020. "The S&P Case Shiller National Home Price Index is calculated on a monthly basis and is based on the prices of single-family homes in nine U.S. Census divisions: New England, Middle Atlantic, East North Central, West North Central, South Atlantic, East South Central, West South Central, Mountain and Pacific. The index is the leading indicator of the American housing market and one of the indicators of the state of the broader economy. The index illustrates the trend of home prices and can be helpful during house purchase decisions. When house prices are rising, a house buyer might want to speed up the house purchase decision as the transaction costs can be much higher in the future. The S&P Case Shiller National Home Price Index has been on the rise since 2011. The index value increased from 140.64 in December 2010 to 236.31 in December 2020."

Published by Statista Research Department, & 20, A. (2021, April 20). *U.S. case Shiller national home price index 2020*. Statista. Retrieved October 5, 2021, from https://www.statista.com/statistics/199360/case-shiller-national-home-price-index-for-the-us-since-2000/.



a) Create a model for the data in the scatterplot using the year as the independent variable and the US National Home Price Index as the dependent variable.

b) In what years does your model say that the National Home Price was about 170 thousand dollars?

c) If housing prices continue to rise, in what year is the national housing price index expected to reach 300 thousand dollars?