

1. Download data
 - a. Go to the St. Louis Federal Reserve website: <https://fred.stlouisfed.org/>
 - b. Search for the **CBOE Volatility Index: VIX**
 - c. Edit Graph to set the Frequency to *Weekly, Ending Friday, Average*
 - d. Set the Date Range: *2018-01-01 to 2018-12-31*
 - e. Download the data in CSV format

2. Modeling in Sheets
 - a. Import the CSV data from step 1 (check to be sure you have **52** rows)
 - b. Produce a line chart
 - c. Fit four (4) Trendline models
 - i. Produce a "**Linear**" trendline
 1. Use Equation for Label
 2. Show R^2
 3. Record Linear equation and R^2 in the spaces below

y-hat= _____ R^2 = _____

- ii. Produce a **2nd degree "Polynomial"** trendline
 1. Set "Polynomial Degree" to 2
 2. Use Equation for Label
 3. Show R^2
 4. Record Polynomial equation and R^2 in the space below

y-hat= _____ R^2 = _____

- iii. Produce a **3rd degree "Polynomial"** trendline
 1. Set "Polynomial Degree" to 3
 2. Use Equation for Label
 3. Show R^2
 4. Record Polynomial equation and R^2 in the space below

y-hat= _____ R^2 = _____

- iv. Produce a **4th degree "Polynomial"** trendline
 1. Set "Polynomial Degree" to 4
 2. Use Equation for Label
 3. Show R^2
 4. Record Polynomial equation and R^2 in the space below

y-hat= _____ R^2 = _____

3. Forecasting - use the table below to record your forecasts.
- Use the Linear model to forecast five (5) time periods: **53, 54, 55, 56, 57**.
 - Use the 2nd deg Polynomial model to forecast five (5) time periods: **53, 54, 55, 56, 57**.
 - Use the 3rd deg Polynomial model to forecast five (5) time periods: **53, 54, 55, 56, 57**.
 - Use the 4th deg Polynomial model to forecast five (5) time periods: **53, 54, 55, 56, 57**.

Time Period	Linear	2nd deg Poly	3rd deg Poly	4th deg Poly
53				
54				
55				
56				
57				

4. Measuring Forecast Error - use the tables below to calculate MAD and RMSE for each model

Time Period	Actuals	Linear	2nd deg Poly	3rd deg Poly	4th deg Poly
53	23.87				
54	19.91				
55	18.51				
56	19.16				
57	18.06				
MAD:					

Circle the most accurate model, as measured by MAD.

Time Period	Actuals	Linear	2nd deg Poly	3rd deg Poly	4th deg Poly
53	23.87				
54	19.91				
55	18.51				
56	19.16				
57	18.06				
RMSE:					

Circle the most accurate model, as measured by RMSE.