ECO374 Homework 3, Due August 2nd

1. **[1.25 pts each]** For this question, submit your r code together with your PDF solution file. The PDF solution file should contain both graphs and numerical answers.
    a. Update the time series on per capita income growth in California to include data from 1/1/1970 up until the most recent past available (data source: https://fred.stlouisfed.org/series/CAPCPI). Note that you will need to edit the graph to change units from Dollars to Percent Change. Plot the time series.
    b. Compute the autocorrelation and partial autocorrelation functions.
    c. Which time series model would you consider for this series?
    d. Estimate the model and construct the 1-step-, 2-step-, and 3-step-ahead forecasts.
2. **[2.5pts]** Consider the AR(3) process. Calculate the unconditional mean and optimal forecast (using quadratic loss) for h=1, h=2, and h=3.