

Instructions: Show work or attach R code used to perform calculations (or any other technology used). Be sure to answer all parts of each problem as completely as possible, and attach work to this cover sheet with a staple.

1. Consider the data in the file **325homework7data.xlsx**. It is a time series data for tickets sold over a 4-year period.
 - a. Plot the data in a line graph.
 - b. Create an autocorrelation graph.
 - c. Create a partial autocorrelation graph for up to 25 lags.
 - d. Can you see the seasonal trend in the lags?
 - a. Based on your model, predict the final five terms in the time series with it. How does it do? (Note: you must build your model without them.)
 - e. Apply a moving average model.
 - f. Does this model show any improvement over the lag model? Provide the error score (such as the RMSE) to support your conclusion.

2. Consider the data in the file **325homework7data2.xlsx**. It is a time series data for revenue over a 27-year period.
 - b. Plot the data in a line graph.
 - c. Create a partial autocorrelation graph for up to 12 lags.
 - d. How many terms should you use in a lag model for this time series?
 - e. Create an ARIMA model for your data.
 - f. Plot your original data, the lag model and the ARIMA model on the graph.
 - g. How does the model do predicting the last five terms in the data set? (Note: you must build your model without them.)
 - h. Does this model show any improvement over the lag model? Provide the error score (such as the RMSE) to support your conclusion.