Week 6 Assignment – 25 Points

1. (25 Points) Do all parts of problem 3 on page 172.
   1. Run a regression model with log (Sales) as the output variable and with a linear trend and monthly predictors. Use this model to forecast the sales in January 2001, January 2002, and February 2002. Think carefully which data to use for model fitting in each case.

Add to the part b the following:

Manually, calculate the sales for January 2001, January, February, and March of 2002. No R code should be involved. Show all the steps of your calculations.

* 1. Using the training period, create an ACF plot until lag-15 for the forecast errors. Now fit an AR model with lag-2 [AR (2)] to the forecast errors.
* Examining the ACF plot and the coefficients of the AR(2) model (and their statistical

significance), what can we learn about the regression model forecasts?

* Compute forecasts for January 2001, January 2002, and February 2002, using the regression and AR(2) index{AR(2)} models.

Again, think which data can be used for fitting the regression and AR(2) models in each case