Homework 7

1. The "gasprices.txt" data set includes average price (US dollars per gallon) for regular gasoline in the United States; there are $n = 145$ weekly observations collected from 1/5/2009 to 10/10/2011 (Source: Rajon Coles, Fall 2011).

a) Using the methods from Chapter 6, identify a candidate ARIMA(p,d,q) model for the data set. You may or may not need to transform the data before consider differencing.

b) Fit the candidate that you identified in a) for the data set, using maximum likelihood outlined in chapter 7.

c) Perform the diagnostic checks outlined in Chapter 8: check residuals for normality (histogram, qq-plot, Shapiro-Wilk test), for independence (runs test), residual ACF, and overfitting analysis.