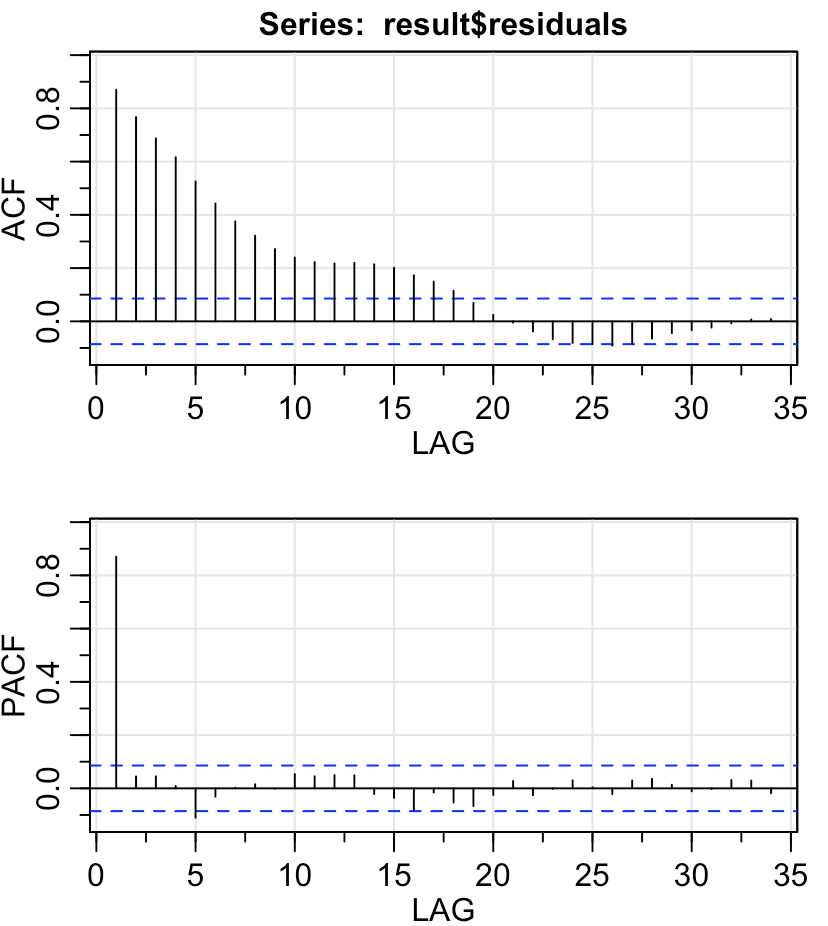
Yunlu Li

STAT 5170

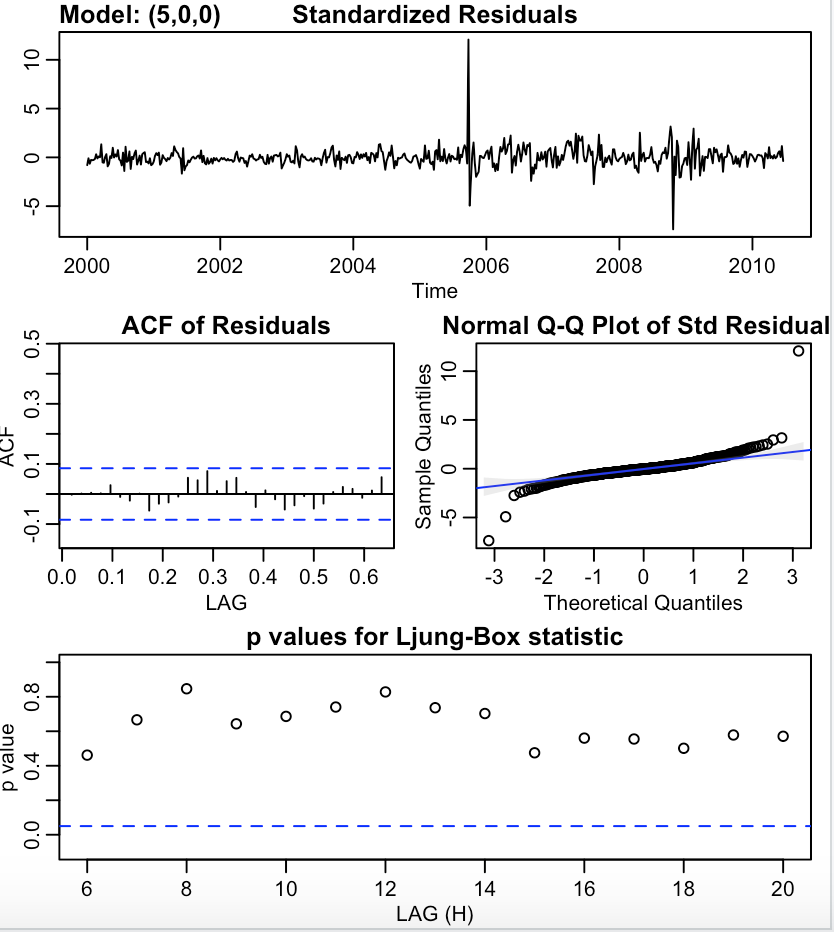
Homework 10

Question 1

(a) AR(5) seems to be appropriate.

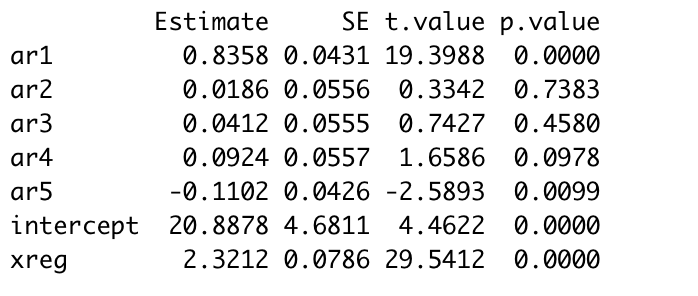


(b) Generally speaking, the model fits the data well. Diagnostics are satisfactory.

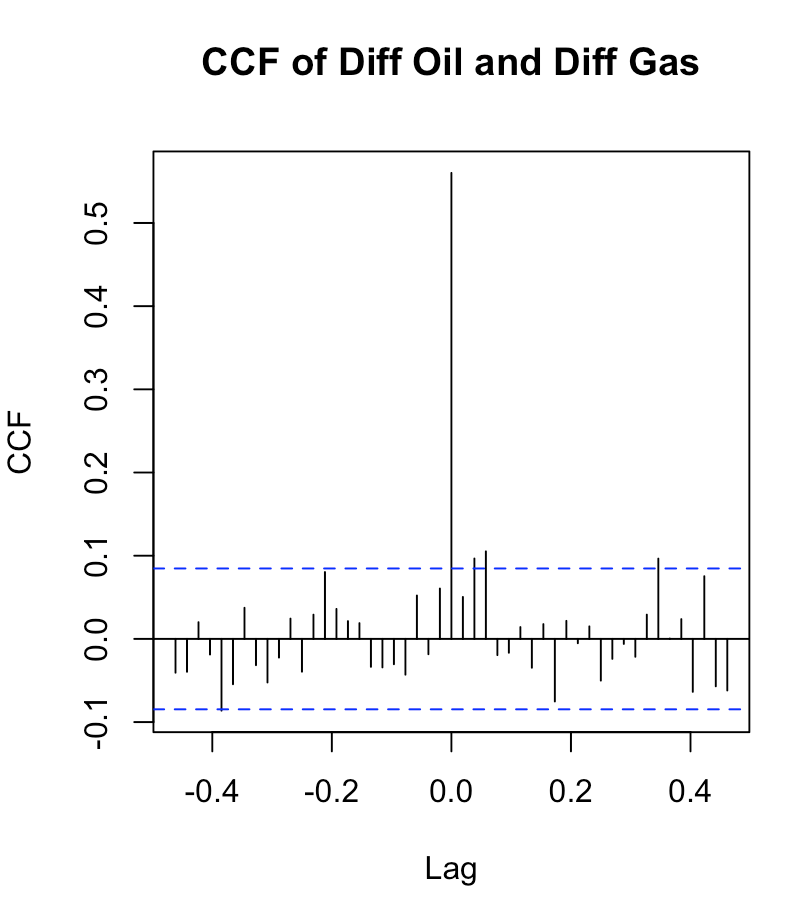


(c) gas=20.8878+2.3212\*oil+ut

where ut=0.8358\*ut-1+0.0186\*ut-2+0.0412\*ut-3+0.0924\*ut-4-0.1102\*ut-5+wt

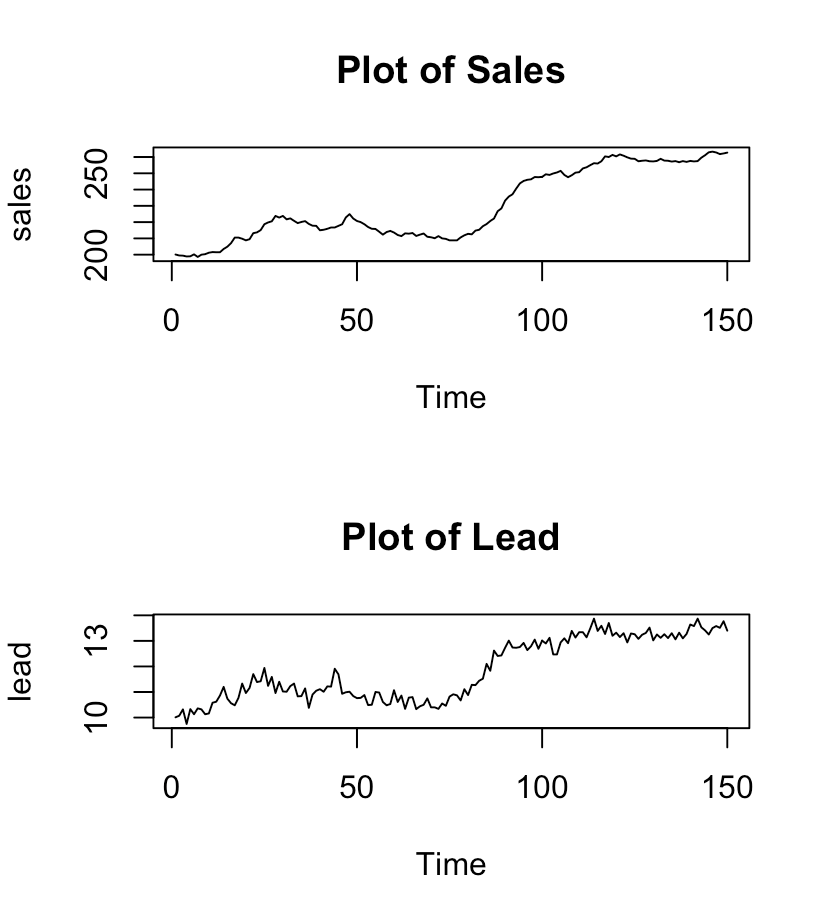


(e) CCP shows significant at lag 0 and insignificant otherwise. We are not regressing on past terms, so a lagged regression is not necessary.



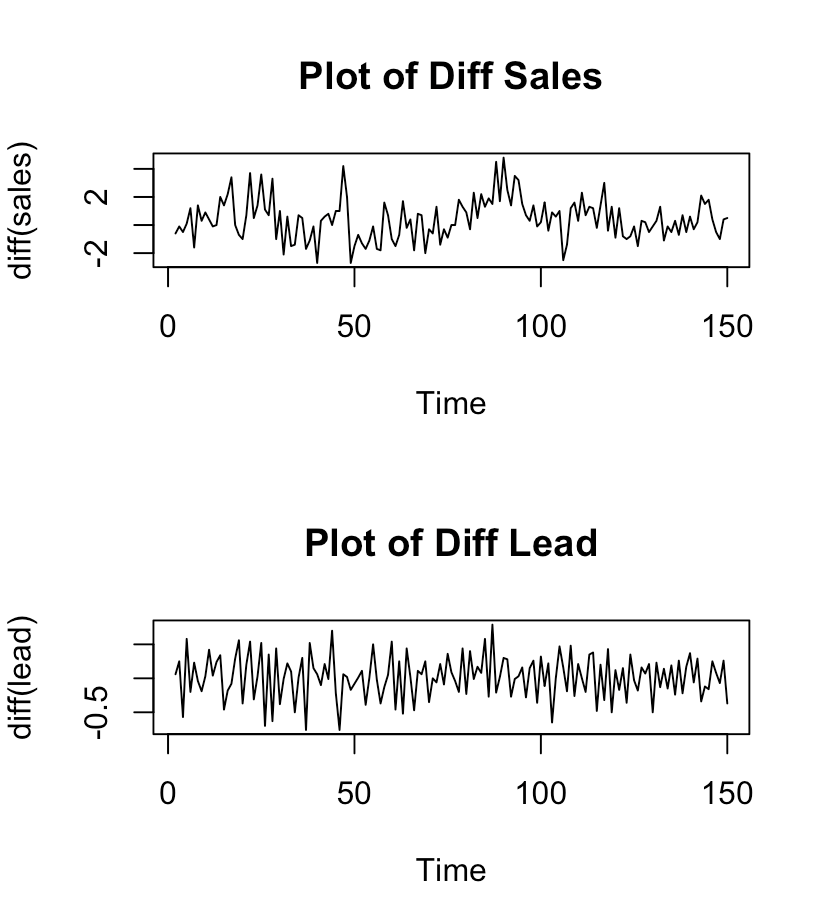
Question 2

(a) Both plots show increasing trend, so they are not stationary.

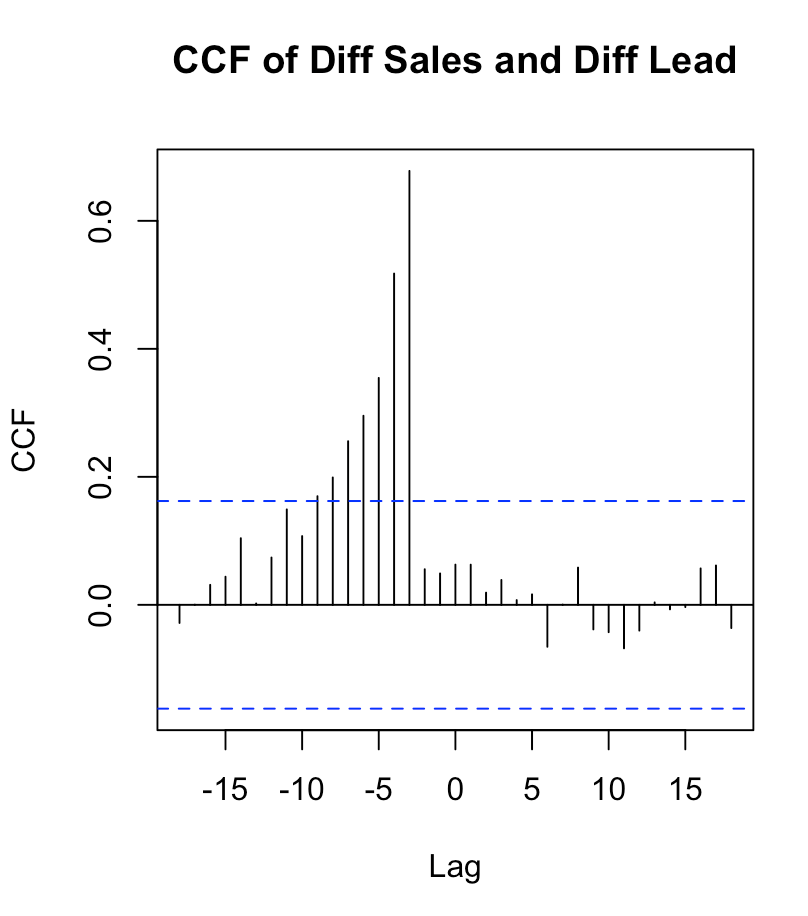


(b) Both subsequent plots are reasonably stationary.

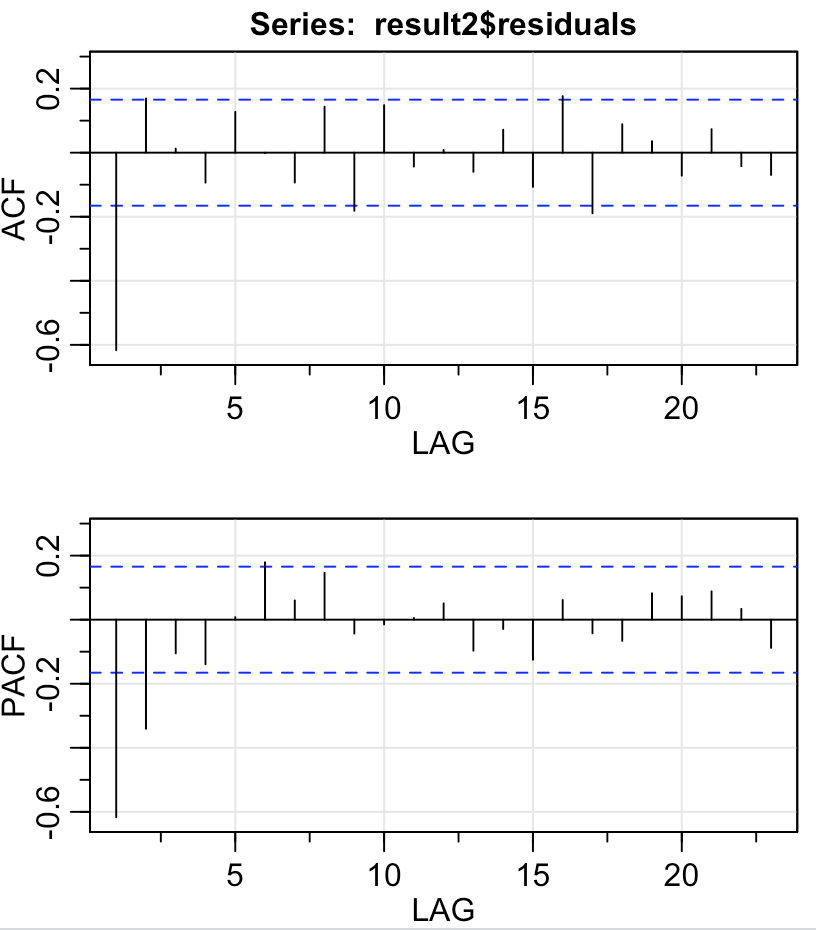
There is no obvious trend and variance are constant.



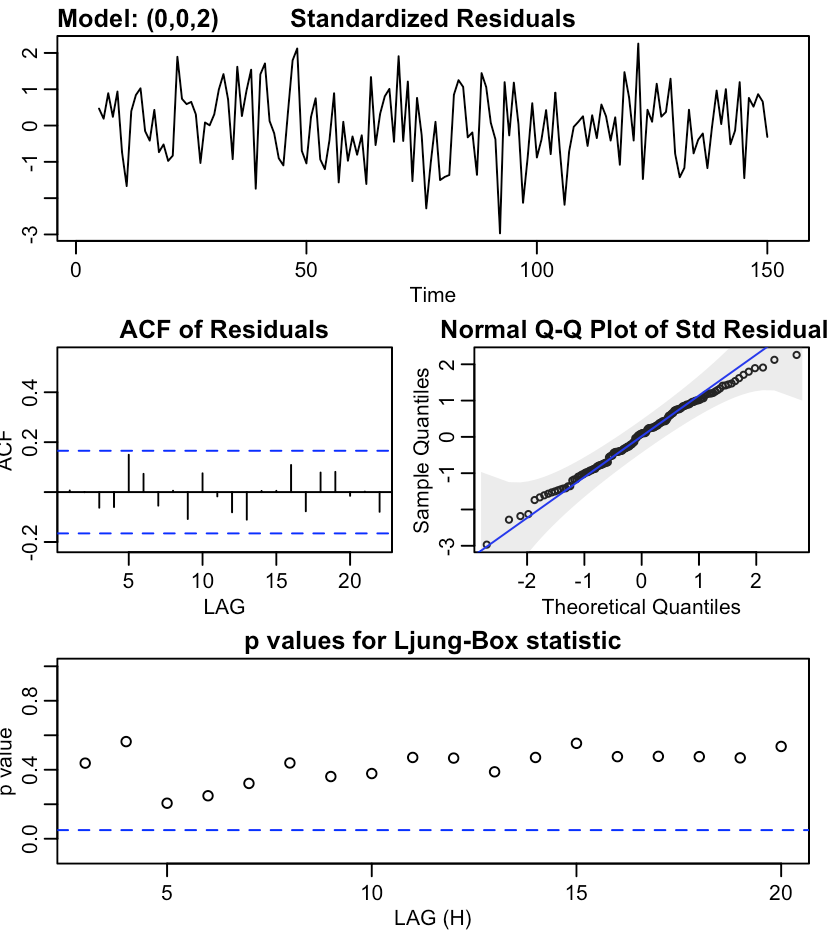
(c) We regress on and



(d) I will consider MA(2).



(e) The model fits the data well, passing all diagnostics.



(f)

where

