Homework 3

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library(ts343)  
library(forecast)  
library(mosaic)

r1 = 0.15  
r2 = -0.21  
r3 = -0.28  
r4 = 0.16  
r5 = -0.10  
n = 60

H0: p3 = 0 Ha: p3 != 0

r3 = -0.28  
sr3 = sqrt((1+2\*((r1^2) + ((r2^2)))/60))  
(ts = r3/sr3)

[1] -0.2796897

ts = -2.037419. |ts| > 2 therefore the test statistic is greater than 2 times the standard deviation. Therefore reject H0.

We have significant evidence that the autocorrelation at lag 3 is discernibly different from 0. p<0.05.

1. H0: p1 = p2 = p3 = p4 = 0 Ha: some pi != 0

(lbq4 = (60\*62)\*(((r1^2)/(60-1)) + ((r2^2)/(60-2)) + ((r3^2)/(60-3)) + ((r4^2)/(60-4))))

[1] 11.06433

LBQ at lag 4 = 11.06433

(1-pchisq(11.06433, 4))

[1] 0.02585047

p = 0.02585047. Reject H0

We have significant evidence (LBQ = 0.02585047, p = 0.02585047) that there is a discernible difference from 0 in the first 4 lags