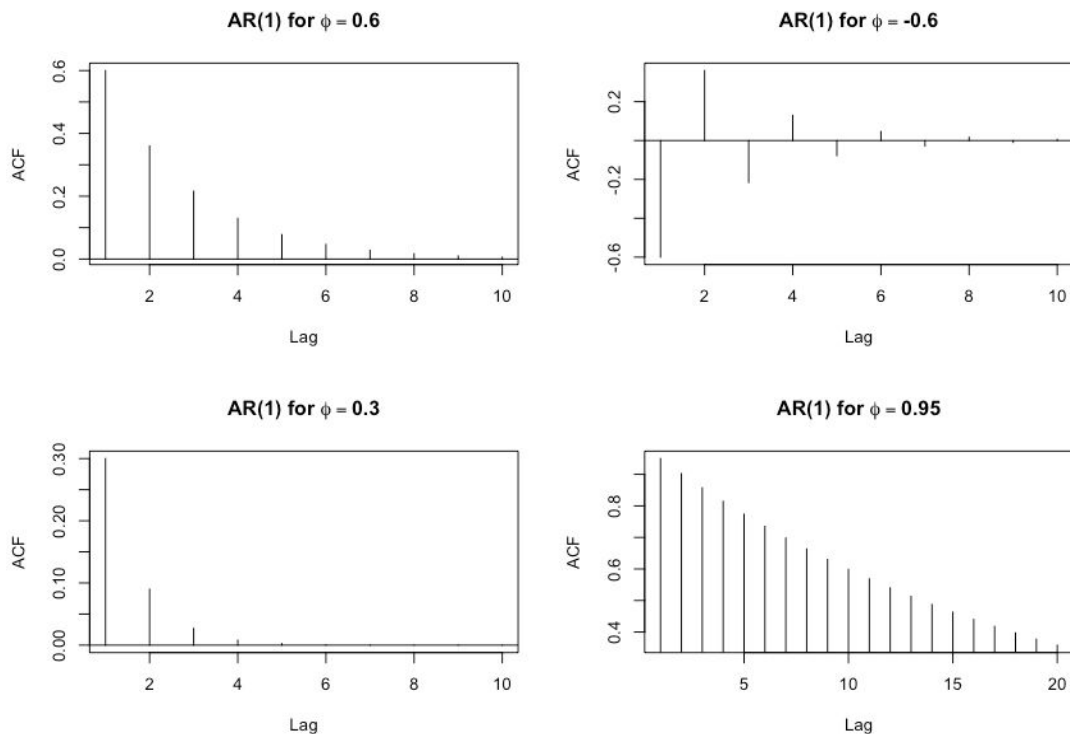


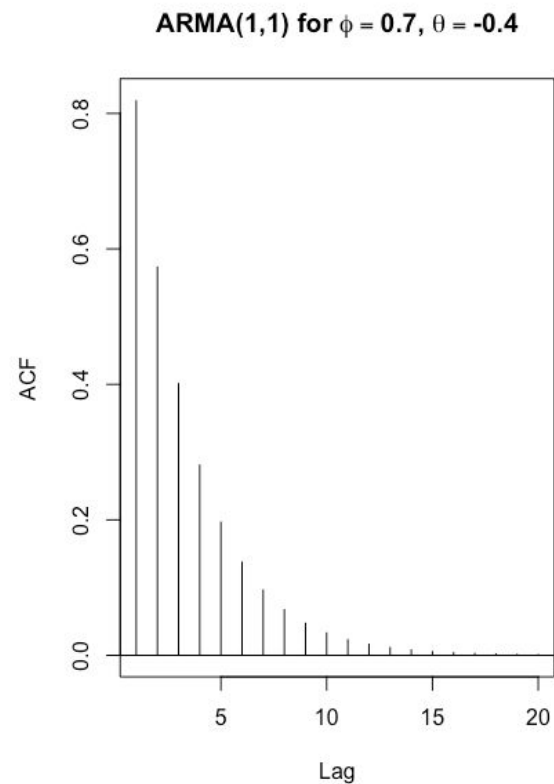
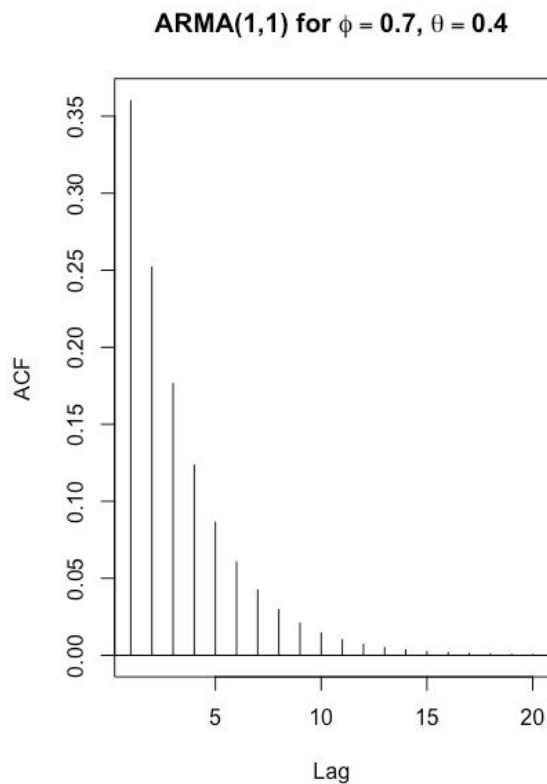
```
### STAT 5814 HW2/PROBLEM 1
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### SNO: 12566087
```

```
library(TSA)
library(latex2exp)
par(mfrow=c(2, 2))
lag = 10
ACF = ARMAacf(ar=.6, lag.max=lag)
plot(y=ACF[-1], x=1:lag, xlab='Lag', ylab='ACF', type='h',
main=TeX('$\\mathbf{AR(1)}$', for\\, '\\phi = 0.6}$'))
abline(h=0)
ACF = ARMAacf(ar=-.6, lag.max=lag)
plot(y=ACF[-1], x=1:lag, xlab='Lag', ylab='ACF', type='h',
main=TeX('$\\mathbf{AR(1)}$', for\\, '\\phi = -0.6}$'))
abline(h=0)
ACF = ARMAacf(ar=.3, lag.max=lag)
plot(y=ACF[-1], x=1:lag, xlab='Lag', ylab='ACF', type='h',
main=TeX('$\\mathbf{AR(1)}$', for\\, '\\phi = 0.3}$'))
abline(h=0)
lag=20
ACF = ARMAacf(ar=.95, lag.max=lag)
plot(y=ACF[-1], x=1:lag, xlab='Lag', ylab='ACF', type='h',
main=TeX('$\\mathbf{AR(1)}$', for\\, '\\phi = 0.95}$'))
abline(h=0)
```



```
### STAT 5814 HW2/PROBLEM 3
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```

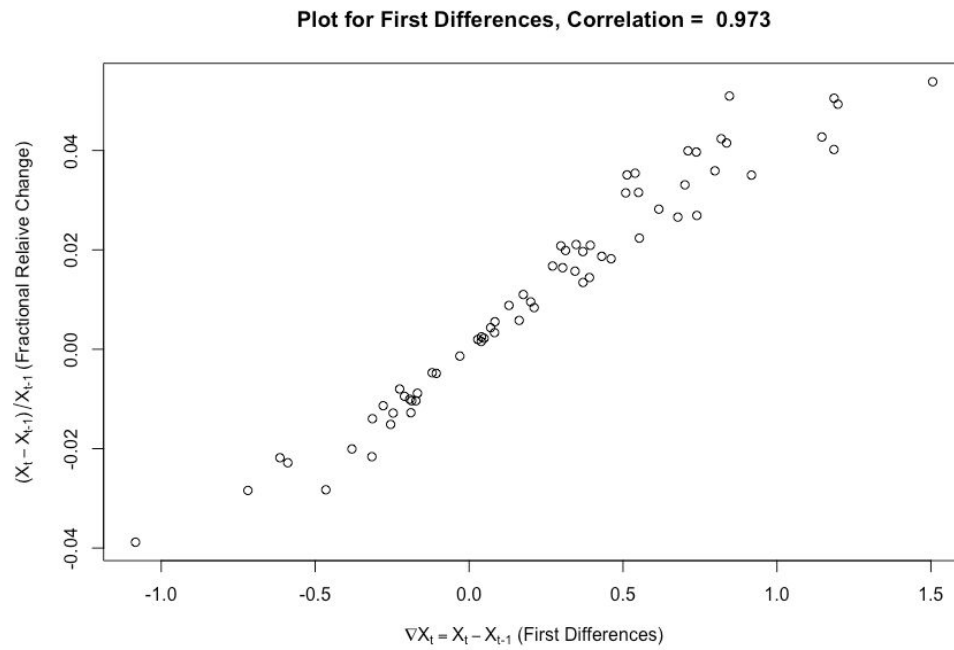
```
library(TSA)
library(latex2exp)
par(mfrow=c(1, 2))
lag = 20
ACF=ARMAacf(ar=0.7,ma=-0.4,lag.max=lag)
plot(y=ACF[-1], x=1:lag, xlab='Lag', ylab='ACF', type='h',
main=TeX('$\\mathbf{ARMA(1, 1)}$', for='', '\\phi = 0.7, '\\theta = 0.4}$'))
abline(h=0)
ACF=ARMAacf(ar=0.7,ma=0.4,lag.max=lag)
plot(y=ACF[-1], x=1:lag, xlab='Lag', ylab='ACF', type='h',
main=TeX('$\\mathbf{ARMA(1, 1)}$', for='', '\\phi = 0.7, '\\theta = -0.4}$'))
abline(h=0)
```



(a)



(b)



(c)

