Q4

AR(2)

Roots

```
r1<-polyroot(c(1,0,-0.25))
r2<-polyroot(c(1,0,0.9))

cat("Roots for Model1 :",r1,"\n\n")
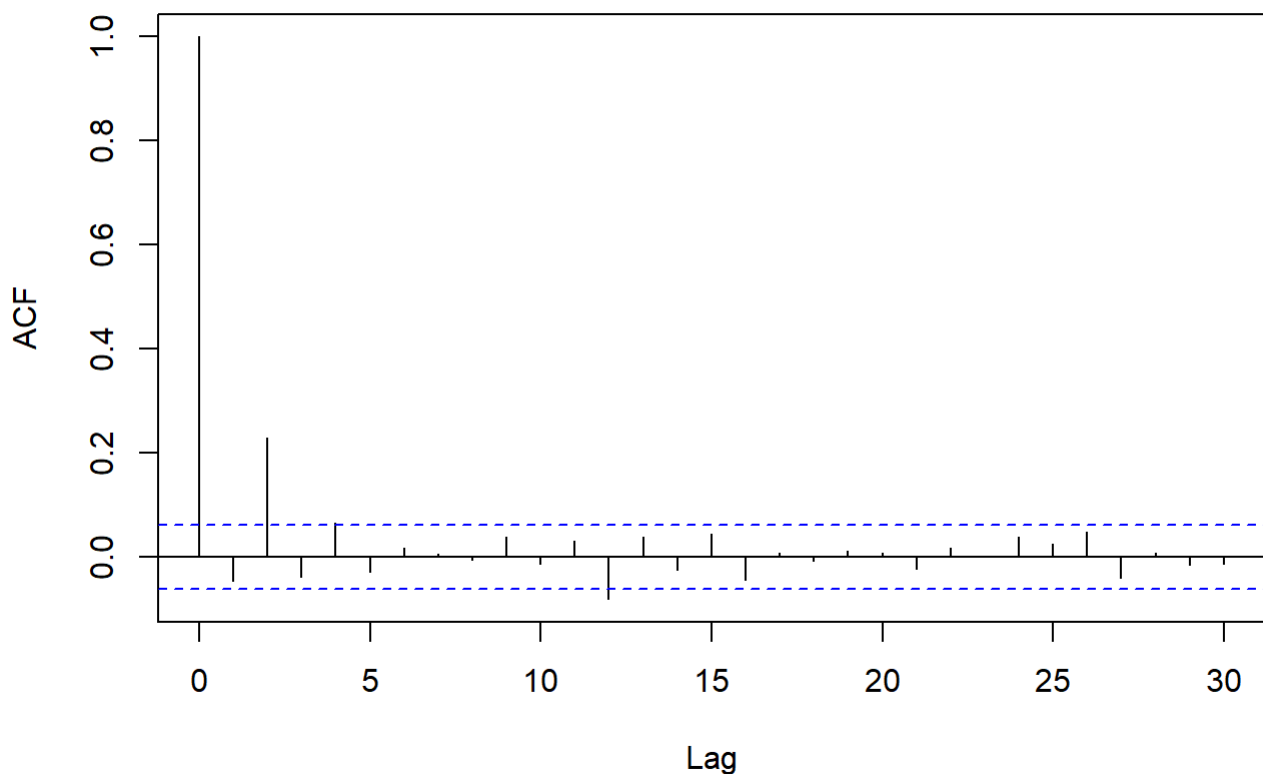```

```
## Roots for Model1 : 2+0i -2+0i
```

```
cat("Roots for Model2 :",r2,"\n")
```

```
## Roots for Model2 : 0+1.054093i 0-1.054093i
```

ACF Model1

```
set.seed(123)
model1 <- arima.sim(n = 1000, model=list(ar=c(0, 0.25)))
acf(model1, main="ACF for Model 1:")
```

ACF for Model 1:

ACF Model2

```
set.seed(123)
model2 <- arima.sim(n = 1000, model=list(ar=c(0, -0.9)))
acf(model2, main="ACF for Model2")
```

ACF for Model2