```
library(graphics)
library(tseries)
library(stats)
library(UsingR)
library(lattice)
library(lmtest)

w=c(0.033,0.043,0.051,0.059,0.061,0.063,0.053,0.036,0.046,0.056,
0.063,0.048,0.053,0.043,0.066,0.053,0.082,0.06,0.08,0.076,0.056,
0.036,0.05,0.053,0.056,0.058,0.061,0.063,0.065,
0.068,0.0815,0.095,0.079,0.063,0.069,0.074,
0.08,0.0765,0.073,0.0695,0.066,0.093,0.083,
0.073,0.063,0.074,0.067,0.06,0.086,0.08,0.073,0.067,0.089,0.064,
0.087,0.079,0.07,0.065,0.06,.063)

par(ask=T)

par(mfrow=c(1,3))

trim=matrix(w,ncol=3,byrow=T)
medietrim=rowMeans(trim)

medietrim

# FIG.1
ts.plot(medietrim,type="l",main="FIG.1") #finchè non lo sostituisco posso usare
abline

w1=c(1:20)
regtrim=lm(medietrim~w1)
abline(regtrim)

summary(regtrim)

val_pred_w=predict(regtrim) #calcolo i 20 valori predetti dalla prima
regressione
length(val_pred_w)
detrend_trim=medietrim-val_pred_w

#FIG.2
plot(detrend_trim,type="l", main="FIG.2")
trim1=matrix(detrend_trim,ncol=4,byrow=T)
medietrim1=colMeans(trim1)
medietrim1_5anni=rep(medietrim1,5)

#FIG.3
plot(medietrim1_5anni,type="l",main="FIG.3")

par(mfrow=c(2,2))

#FIG.4
acf(medietrim1_5anni,main="FIG.4")

valAdjtrim=medietrim-medietrim1_5anni #trend_ random
fitadj_trim=lm(valAdjtrim~w1)

fitadj_trim

summary(fitadj_trim)

#FIG.5
plot(valAdjtrim,type="l",main="FIG.5")
abline(fitadj_trim)
```

```
#ANALISI RESIDUI
dwtest(fitadj_trim, alternative="two.sided")
#forse potremo interpolare l'elemento 11

#FIG.6
res=resid(fitadj_trim)
plot(res,type="l", main="FIG.6")

#FIG.7
acf(res, main="FIG.7-res")
par(mfrow=c(2,2))
#FIG.8-12
plot(fitadj_trim, main="FIG.8-12")
```