rm(list=ls())

x1=c(0.016,0.027,0.026,0.022,0.057,0.092,0.096)

y1=c(24.660,18,13.630,8.420,7.660,7.640,7.500)

y2=c(51.700,30.500,29,14.200,4.100,5,11.600)

plot(x1 ~y2)

abline(lm(y2~x1))

#1

lm(y2~x1)

#2

summary(lm(y2~x1))

#3

result.lm=lm(lm(y2~x1))

anova(result.lm)

#4

#standard error of b0 b1

result.lm=lm(lm(y2~x1))

coef(result.lm)

lm.res=resid(result.lm)

summary(lm.res)

par(mfrow=c(2,2))

plot(result.lm)

regmodel=lm(y1+y2~x1)

summary(regmodel)

fits=regmodel$fitted

resids=regmodel$coeff[2]

beta1hat=regmodel$coeff[2]

confint(regmodel)

predict.lm(regmodel,interval='confidence')

df<-data.frame(x1,y1,y2)

df

fit1<-lm(x1~y1+y2,data=df)

fit1<-lm(x1~.,data=df)

fit1

summary(fit1)

fit2<-lm(x1~y1)

summary(fit2)

fit3<-lm(x1~y2)

summary(fit3)

fit4<-lm(y1~y2)

summary(fit4)

model1<-step(lm(x1~y1+y2,data=df),k=3,direction='backward')

model1<-step(lm(x1~y1+y2,data=df),k=3,direction='forward')

model1<-step(lm(x1~y1+y2,data=df),k=3,direction='both')

summary(model1)

#7

#a

italy=c(0.027,18,30.5)

westgermany=c(0.026,13.63,29)

belgium=c(0.022,8.42,14.2)

chisq.test(data.frame(italy,westgermany,belgium))

#b

ireland=c(0.092,7.64,5)

denmark=c(.096,7.5,11.6)

chisq.test(data.frame(ireland,denmark)

df<-data.frame(temp,chem)

df

fit1<-lm(x1~y1+y2,data=df)

fit1

summary(fit1) #p-value

model<-step(lm(x1~y1+y2,data=df),k=2,direction='both')

model<-step(lm(x1~y1+y2,data=df),k=2,direction='backward')

model<-step(lm(x1~y1+y2,data=df),k=2,direction='forward')

model<-step(lm(x1~y1+y2,data=df),k=2,direction='downward')

model<-step(lm(x1~y1+y2,data=df),k=2,direction='upward')

library(MASS)

step1<-stepAIC(fit1,direction='backward')

step1<-stepAIC(fit1,direction='forward')

step1<-stepAIC(fit1,direction='both')

summary(step1)