##FATORIAL 2^K

##FATORIAL FRACIONAL

rm(list=ls(all=TRUE)) # removendo todos os objetos criados anteriormente

detach(dat)

search()

y<-c(5.55,4.47,5.19,5.32,10.54,11.56,5.08,5.45,5.12,5.63,6.18,5.24,10.73,10.33,6.53,4.93)

y

x1<-c(-1,1,-1,1,-1,1,-1,1,-1,1,-1,1,-1,1,-1,1)

x2<-c(-1,-1,1,1,-1,-1,1,1,-1,-1,1,1,-1,-1,1,1)

x3<-c(-1,-1,-1,-1,1,1,1,1,-1,-1,-1,-1,1,1,1,1)

x4<-c(-1,-1,-1,-1,-1,-1,-1,-1,1,1,1,1,1,1,1,1)

x12<-x1\*x2

x13<-x1\*x3

x14<-x1\*x4

x23<-x2\*x3

x24<-x2\*x4

x34<-x3\*x4

x123<-x1\*x2\*x3

x124<-x1\*x2\*x4

x134<-x1\*x3\*x4

x234<-x2\*x3\*x4

x1234<-x1\*x2\*x3\*x4

Xt<-cbind(x1,x2,x3,x4,x12,x13,x14,x23,x24,x34,x123,x124,x134,x234,x1234)

Xt

Xr<-cbind(x1,x2,x3,x4,x12,x13,x14,x23,x24,x34,x123,x124,x134,x234)

Xr

dim(Xr)

bd<-data.frame(x1,x2,x3,x4,x12,x13,x14,x23,x24,x34,x123,x124,x134,x234,x1234,y)

bd

plot(seq(1:16),y,main="Perfis individuais dos Trat")

fit0<-lm(y~Xt)

summary(fit0)

anova(fit0)

fit1<-lm(y~Xr)

summary(fit1)

anova(fit1)

fit2<-lm(y~Xr[,-c(11,12,13,14)])

summary(fit2)

anova(fit2)

library(car)

with(bd, interaction.plot(factor(x2),factor(x3),y,main="Gráfico de interação - x23"))

#Análise do fatorial fracional: 0=1234

#c(2,3,5,8,9,12,14,15): linhas omitidas

#c(1,4,6,7,10,11,13,16): linhas analisadas

Xfmeio<- Xt[c(1,4,6,7,10,11,13,16),]

Xfmeio

yfmeio<-y[c(1,4,6,7,10,11,13,16)]

fit3<-lm(yfmeio~Xfmeio)

summary(fit3)

anova(fit3)

head(Xfmeio)

fit4<-lm(yfmeio~Xfmeio[,c(2,3,8)])

summary(fit4)

anova(fit4)

bdfmeio<-data.frame(Xfmeio,yfmeio)

with(bdfmeio, interaction.plot(factor(x2),factor(x3),yfmeio,main="Gráfico de interação - x23"))

#Alternativamente:

#Análise do fatorial fracional: 0=-1234

#c(2,3,5,8,9,12,14,15): linhas analisadas

#c(1,4,6,7,10,11,13,16): linhas omitidas

Xfmeio2<- Xt[c(2,3,5,8,9,12,14,15),]

Xfmeio2

yfmeio2<-y[c(2,3,5,8,9,12,14,15)]

yfmeio2

fit5<-lm(yfmeio2~Xfmeio2)

summary(fit5)

anova(fit5)

fit6<-lm(yfmeio2~Xfmeio2[,c(2,3,8)])

summary(fit6)

anova(fit6)

bdfmeio2<-data.frame(Xfmeio2,yfmeio2)

with(bdfmeio2, interaction.plot(factor(x2),factor(x3),yfmeio2,main="Gráfico de interação - x23"))