#9.1

opinion=data.frame(expand.grid(G=factor(c("Male","Female")),I=factor(c("S","O")),

H=factor(c("S","O"))),count=c(76,114,6,11,160,181,25,48))

model.GH.GI=glm(count~G+H+I+G:H+G:I,family=poisson,data=opinion)

model.GH.HI=glm(count~G+H+I+G:H+H:I,family=poisson,data=opinion)

model.GI.HI=glm(count~G+H+I+G:I+H:I,family=poisson,data=opinion)

model.GH.GI.HI=glm(count~G+H+I+G:H+G:I+H:I,family=poisson,data=opinion)

summary(model.GH.GI)

summary(model.GH.HI)

summary(model.HI.GI)

summary(model.GH.GI.HI)

#9.2

personality=data.frame(expand.grid(JP=c("J","P"),SN=c("S","N"),EI=c("E","I"),

TF=c("T","F")),count=c(77,42,23,18,140,52,13,35,106,79,31,80,138,106,31,79))

homo.fit=glm(count~.^2,family=poisson,data=personality)

summary(homo.fit)

# 4.3

snoreScores1 = c(0,2,4,6)

snoreScores2 = c(0,1,2,3)

snoreScores3 = c(1,2,3,4)

yes = c(24,35,21,30)

no = c(1355,603,192,224)

prop.yes = yes/(yes+no)

snoreDF1 = data.frame(snore = snoreScores1, yes, no)

snoreDF2 = data.frame(snore = snoreScores2, yes, no)

snoreDF3 = data.frame(snore = snoreScores3, yes, no)

# snoreScores1

snoringGLM1 = glm(cbind(yes, no)~snore,family = binomial(link = "identity"),data = snoreDF1 )

g1 = summary(snoringGLM1)

g1

# snoreScores2

snoringGLM2 = glm(cbind(yes, no)~snore,family = binomial(link="identity"),data = snoreDF2 )

g2 = summary(snoringGLM2)

g2

# snoreScores3

snoringGLM3 = glm(cbind(yes, no)~snore,family = binomial(link="identity"),data = snoreDF3 )

g3 = summary(snoringGLM3)

g3

#4.4

data=read.csv("/Users/ricky/Desktop/crabdata.csv")

data$weight=data$weight/1000

fit2=lm(y~weight, data=data)

summary(fit2)

fit3=glm(y~weight, data=data, family=binomial(link=logit))

summary(fit3)