##Rders\_hw1\_reli.ctt.R##

# read - a matrix of 1000x22, id i1, i2, .., i21)

res.data<-data.matrix(read.table

 ("C:\\COURSES\\Rders\\hw\\data0157.dat",header=F,row.names=NULL))

# start with the output file

write("CTT RELI EST - HW1","C:\\COURSES\\Rders\\hw\\reli\_ctt.txt")

# the first column is id, leave it for now.

re.data<-res.data[,-1]

#define

k<-21

k

### or

k<-ncol(re.data)

k

n<-1000

### or

n<-nrow(re.data)

n

# COMPUTE - item

#ps

pcor<-colMeans(re.data)

pcor

#p\*q

pvar<-pcor\*(1-pcor)

write(c("k n"),"C:\\COURSES\\Rders\\hw\\reli\_ctt.txt", append=T)

write(c(k, n),"C:\\COURSES\\Rders\\hw\\reli\_ctt.txt", append=T)

k\_id<-c(1:k)

ipars<-round(rbind(k\_id, pcor,pvar),2)

write("item p var","C:\\COURSES\\Rders\\hw\\reli\_ctt.txt")

write(ipars,"C:\\COURSES\\Rders\\hw\\reli\_ctt.txt",

 ncol=3, append=T)

# COMPUTE - test

testx<-rowSums(re.data)

s\_testx<-summary(testx)

s\_testx

test\_mean<-mean(testx)

test\_var<-var(testx)

write("ort var","C:\\COURSES\\Rders\\hw\\reli\_ctt.txt", append=T)

write(round(c(test\_mean, test\_var),2),

 "C:\\COURSES\\Rders\\hw\\reli\_ctt.txt", ncol=2, append=T)

cor.fac<-k/(k-1)

#sum of item vars

s\_item\_var<-sum(ipars[,2])

#divided by

ratio<-s\_item\_var/test\_var

est<-cor.fac\*(1-ratio)

write("Cronbach's alpha",

 "C:\\COURSES\\Rders\\hw\\reli\_ctt.txt", append=T)

write((round(est,2)),

 "C:\\COURSES\\Rders\\hw\\reli\_ctt.txt",ncol=2,append=T)

##plot

# histogram with added parameters

hist(testx,

 main="n=1000 için Puan Dağılımı",

 xlab="Toplam Puanlar",

 xlim=c(1,21),

 col="darkmagenta",

 freq=FALSE

)