kod=1

zh1=function(kod){

set.seed(kod);

x=0.2\*qgamma(runif(100),1.2)

cat("median=",median(x))

cat(" mad=",mad(x)\*qnorm(0.75),"\n")

cat("szorasi egy.=",sd(x)/mean(x),"\n")

cat("Konf.varhato ertek=",mean(x)-qt(0.975,length(x)-1)\*sd(x)/sqrt(length(x)));cat(", ",mean(x)+qt(0.975,length(x)-1)\*sd(x)/sqrt(length(x)),"\n")

a=c(0,0.5,1.5,3.5,6,20)

p=vector()

for (i in 1:(length(a)-1)) p[i]=pexp(a[i+1])-pexp(a[i])

np=length(x)\*p

x.cut=cut(x/mean(x),breaks=a)

nu=vector()

for (i in 1:(length(a)-1)) nu[i]=table(x.cut)[[i]]

chi2.x=sum((nu-np)^2/np)

cat("p=",1-pchisq(chi2.x,length(a)-3),"\n")

set.seed(kod);

x=rnorm(60);

y=rnorm(60);

z=10\*(x\*y)/sqrt(x\*x+y\*y)+3

cat("Atlag=",mean(z),"\n")

cat("sn2=",(length(z)-1)/length(z)\*var(z),"\n")

cat("Konf.szorasnegyzet",(length(z)-1)\*var(z)/qchisq(0.975,length(z)-1),", ",(length(z)-1)\*var(z)/qchisq(0.025,length(z)-1),"\n")

a=c(-6,-1.5,-0.5,0.5,1.5,6)

p=vector()

for (i in 1:(length(a)-1))

p[i]=pnorm(a[i+1])-pnorm(a[i])

np=length(z)\*p

z.cut=cut((z-mean(z))/sd(z),breaks=a)

nu=vector()

for (i in 1:(length(a)-1))

nu[i]=table(z.cut)[[i]]

chi2.z=sum((nu-np)^2/np)

cat("p=",1-pchisq(chi2.z,length(a)-4),"\n")

cat("Kvantilis=",sort(z)[round(length(z)\*0.56)],"\n")}