```
######     soal 1  alf     ############

x<-
c(0.11,0.14,0.16,0.19,0.26,0.28,0.33,0.38,0.38,0.52,0.58,0.62,0.63,0.76,0.86,0.87,0.88,0.9
x<-sort(x)
p<-0.7
n=length(x)
r<-floor((n+1)*p)
w<-(n+1)*p-r
Qp<-(1-w)*x[r]+w*x[r+1]
Qp


############### ghesmat b soal 1   ###########

a<-0.95
p<-0.5
i<-{}
M<-matrix(0,n*(n-1)/2,3)
for(j in 1:(n-1)){
  for (k in (j+1):n) {


  i=c(i,k)
  l=length(i)
M[l,1]=j
M[l,2]=k
M[l,3]=pbinom(k-1,n,p)-pbinom(j-1,n,p)
}
}
M
p=M[,3]
a1=min(p[p>=a])
c=M[M[,3]==a1,]
dimnames(c)=list(NULL,c("j","k","1-alpha"))
c

#########    soal 2     #########

x<-
c(0.11,0.14,0.16,0.19,0.26,0.28,0.33,0.38,0.38,0.52,0.58,0.62,0.63,0.76,0.86,0.87,0.88,0.9
library(BSDA)
SIGN.test(x,md=1,alternative = "less")
#########    soal 3    #############
y<-
c(163,165,162,189,161,171,158,151,169,182,163,139,172,165,148,166,172,163,187,173)
library(BSDA)
SIGN.test(y,md=160,alternative = "greater")
p=0.5
A=y[y!=160]
n=length(A)
B=length(A[A>160])
B
p_value=pbinom(b,n,1-p)
```

```
p_value
###############      soal 4      ############
z<-c(89,90,86,80,97,81,94,82,87,93,94,84,83,78,98)
p=0.75
A=z[z!=85]
n=length(A)
b=length(A[A>85])
d<-pbinom(b,n,1-p)
a<-1-pbinom(b-1,n,1-p)
p_value<-2*min(a,d)
p_value
B=length(z[z>85])
B

##########   soal 5   ##########

w<-c(10.2,14.1,9.2,11.3,7.2,9.8,6.5,11.8,8.7,10.8)
y<-8
wilcox.test(w-y,alternative = "greater")
R<-1-psignrank(48,10)
R

##########   soal 6   ############

x<-c(126,117,115,118,118,128,125,120)
y<-c(130,118,125,120,121,125,130,120)
sort(x)
sort(y)
wilcox.test(y,x,correct = T,paired = T,alternative = "greater")

##################   SOAL 7   ######################

x<-c(75,69.8,85.7,74,69,83.3,68.9,77.8,72.2,77.4)
y<-c(85.4,83.1,80.2,74.5,70,81.5,75.4,78,85.4,80.4)
d=y-x
d=d[d=!0]
n=length(d)
B=length(d[d>0])
p_value=2*min(pbinom(B,n,1/2),1-pbinom(B-1,n,1/2))
p_value

############# SOAL 8  ##################

A<-c(rep(1,4),rep(2,3),rep(3,3))
B<-c(rep(1,3),rep(2,5),rep(3,2))
wilcox.test(A,B,alternative = "two.sided",correct = T)

############### SOAL 9  #############

A<-c(1,5,7,8,13,15,20,21,23,24,25,27,28,29,30)
B<-c(2,3,4,6,9,10,11,12,14,16,17,18,19,22,26)
n<-length(A)
m<-length(B)
N<- n+m
```

```
C<-c(B,A)
R=rank(C)
WB=sum(R[1:n])
WB
WAB=WB-n*(n+1)/2
WAB
EWB=n*(N+1)/2
VWB=n*m*(N+1)/12
p_value=pnorm(WB+1/2-EWB)/sqrt(VWB)
p_value=pwilcox(WAB,n,m)
p_value

############ soal 10 ########
Input =("
Group Value
Group.1 19
Group.1 11.7
Group.1 17.8
Group.1 14.8
Group.1 13.9
Group.2 18.2
Group.2 14.8
Group.2 13.1
Group.2 12.6
Group.2 15.2
Group.2 12.8
Group.3 13.4
Group.3 14.1
Group.3 12.3
Group.3 12.3
Group.3 14.7
Group.3 13.9
Group.3 13.8
Group.3 14.3
")

Data = read.table(textConnection(Input),header=TRUE)
library(dplyr)
Data =mutate(Data,Group = factor(Group, levels=unique(Group)))

library(lattice)
histogram(~Value|Group,data=Data,layout=c(1,3))


library(FSA)
Summarize(Value ~ Group,data = Data)
kruskal.test(Value ~ Group,data = Data)

######### soal 11 ###########

x1<-c(3,4,3)
x2<-c(4,3,4)
x3<-c(2,2,1)
x4<-c(1,1,2)
```

```
x<-cbind(x1,x2,x3,x4)
friedman.test(x)

######### soal 12 ############

x<-c(0.621,0.503,0.203,0.477,0.710,0.581,0.329,0.480,0.554,0.382)
plot(ecdf(x))
ks.test(x, "punif")
ks.test(x, "pnorm")

########### soal 13 ##########

x<-c(10.3,11.2,11.5,11.9,12.8)
y<-c(10.4,11.8,12.5,12.6,13.8,13.9)
ks.test(x, y, alternative = "two.sided")
plot(ecdf(x))
plot(ecdf(y))
```