

# Final Presentation Figures

2023-01-29

```
require(dqfAnomaly)

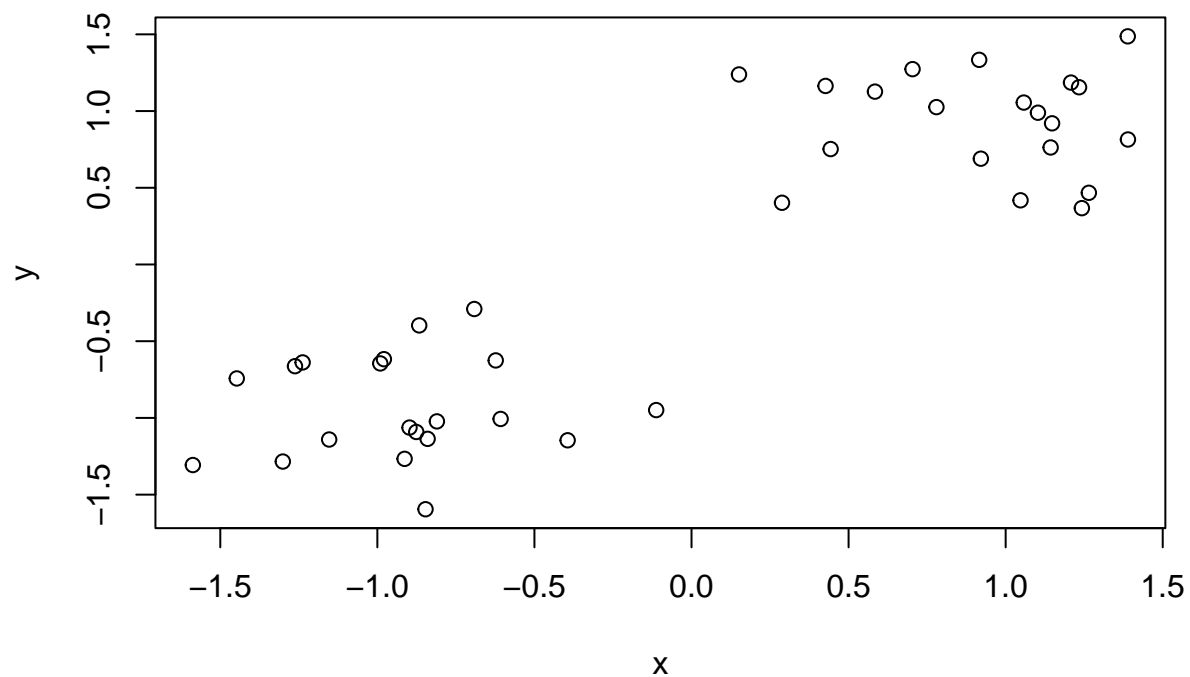
## Loading required package: dqfAnomaly
show <- function(length,s){
  labels <- rep(1,length)
  labels[s] <- 2
  return(labels)
}

plot.dqf <- function(dqf,labels=NULL,xlab='',ylab=''){
  x <- seq(.01,1,.01)

  n.functions <- length(dqf[,1])
  if(is.null(labels)) labels <- rep(1,n.functions)

  plot(x,dqf[1,],t='l',ylim=c(0,max(dqf)),col=labels[1],xlab=xlab,ylab=ylab)
  for(i in 2:n.functions){
    lines(x,dqf[i,],col=labels[i])
  }
}

set.seed(47)
x <- c(rnorm(20),rnorm(20,5))
y <- c(rnorm(20),rnorm(20,5))
df <- data.frame(x,y)
df <- scale(df)
plot(df)
```



```

km <- kmeans(df,2)
cluster <- km$cluster
length(which(cluster==1))

## [1] 20

x1 <- 2*x
x2 <- x+y
y1 <- y^2
y2 <- x-y

df.highdim <- data.frame(x1,x2,y1,y2,rnorm(40),rnorm(40),rnorm(40),rnorm(40),rnorm(40))
df.highdim <- scale(df.highdim)

km <- kmeans(df.highdim,2)
cluster <- km$cluster
cluster

## [1] 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2
## [39] 2 2

length(which(cluster==1))

## [1] 20

```

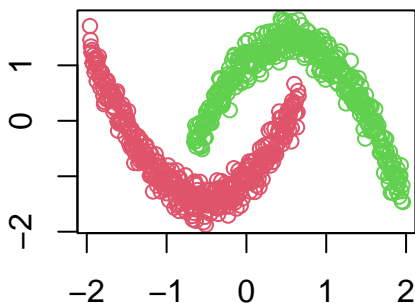
## Half Moon Dataset

```
?identify()
```

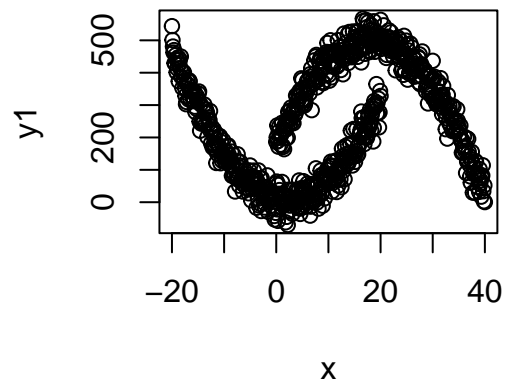
```
## starting httpd help server ... done
```

```
identifyPch <- function(x, y = NULL, n = length(x), plot = FALSE, pch = 19, ...)  
{  
  xy <- xy.coords(x, y); x <- xy$x; y <- xy$y  
  sel <- rep(FALSE, length(x))  
  while(sum(sel) < n) {  
    ans <- identify(x[!sel], y[!sel], labels = which(!sel), n = 1, plot = plot, ...)  
    if(!length(ans)) break  
    ans <- which(!sel)[ans]  
    points(x[ans], y[ans], pch = pch)  
    sel[ans] <- TRUE  
  }  
  ## return indices of selected points  
  which(sel)  
}
```

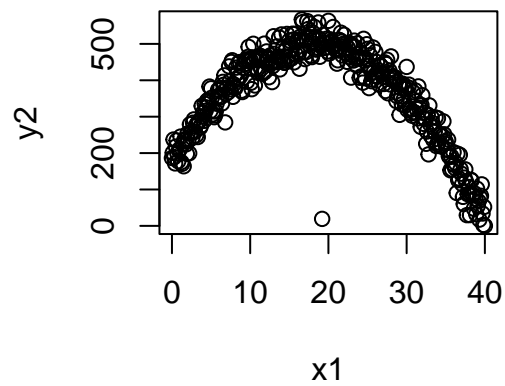
```
set.seed(47)  
x <- seq(-20,20,.1)  
x1 <- x+20  
y1 <- (x-2)^2 + rnorm(length(x),0,30)  
y2 <- -(x+2)^2 + 500 + rnorm(length(x),0,30)  
  
data1 <- cbind(x,y1)  
data2 <- cbind(x1,y2)  
m.data <- rbind(data1,data2)  
m.labels <- c(rep(2,length(data1[,1])),rep(3,length(data2[,1])))  
  
m.df <- rbind(cbind(x,y1),cbind(x1,y2))  
  
plot(scale(m.df),col=m.labels,xlab='',ylab='')
```



```
plot(m.data)
```



```
plot(rbind(data1[393],data2))
```



```
data3 <- rbind(data1[393],data2)
```

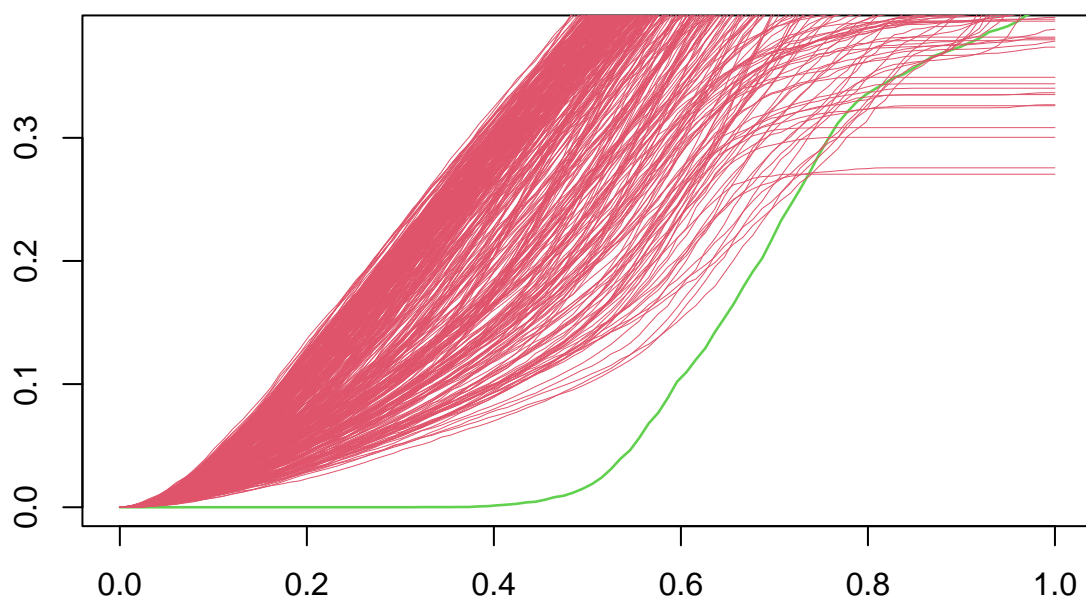
```
which(m.data[(length(x)/2):length(x),1] == max(m.data[(length(x)/2):length(x),1]))
```

```
## [1] 201
```

```
hm.dqf <- dqf.outlier(data3)
```

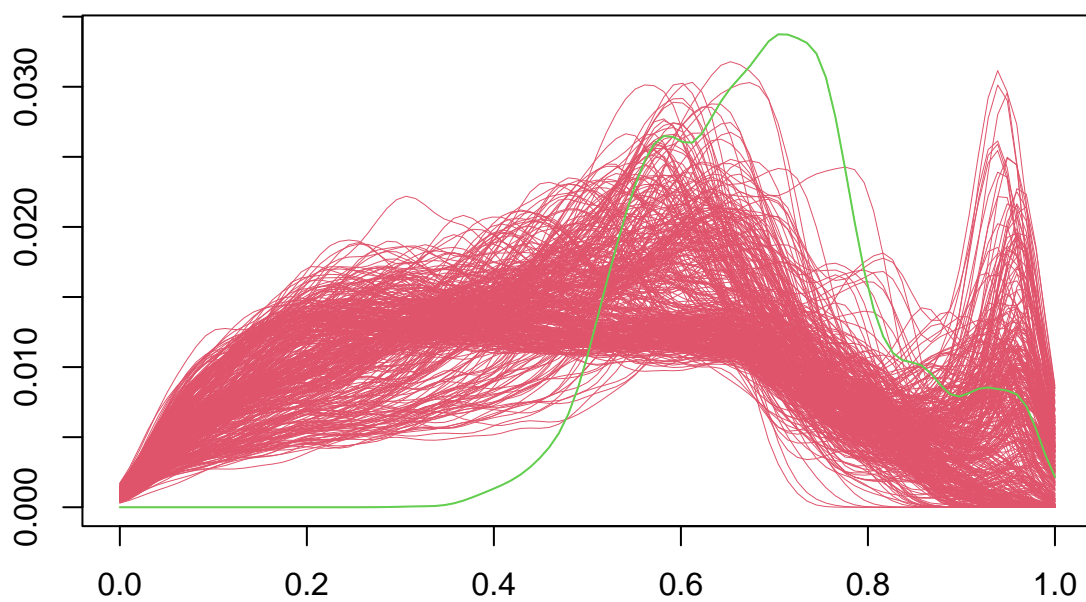
```
dqf.explore(hm.dqf,1)
```

Select Observations – Press ESC when done



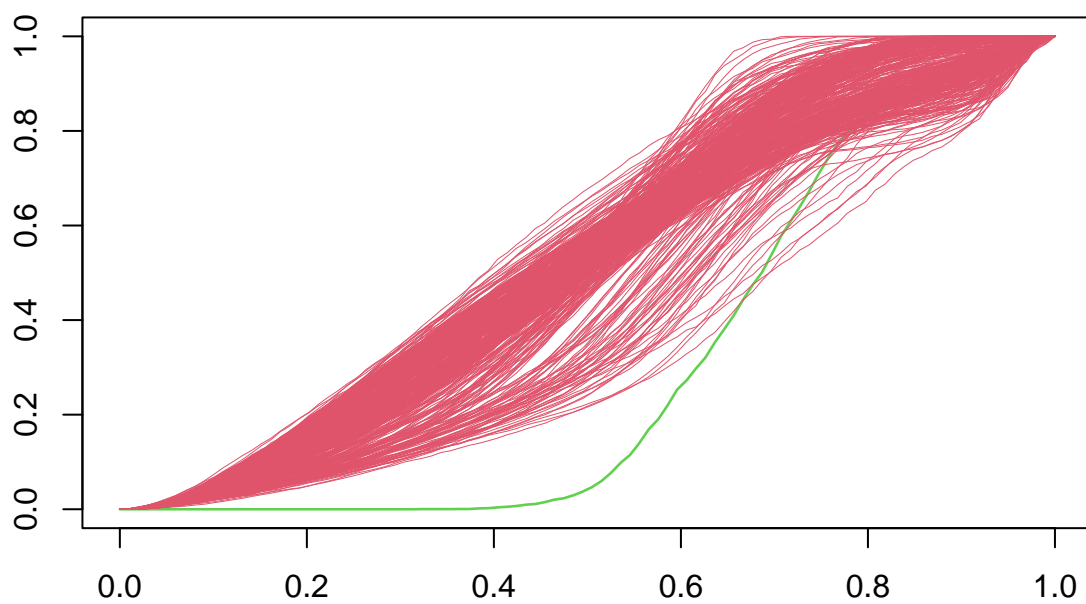
1 of 3

**Select Observations – Press ESC when done**

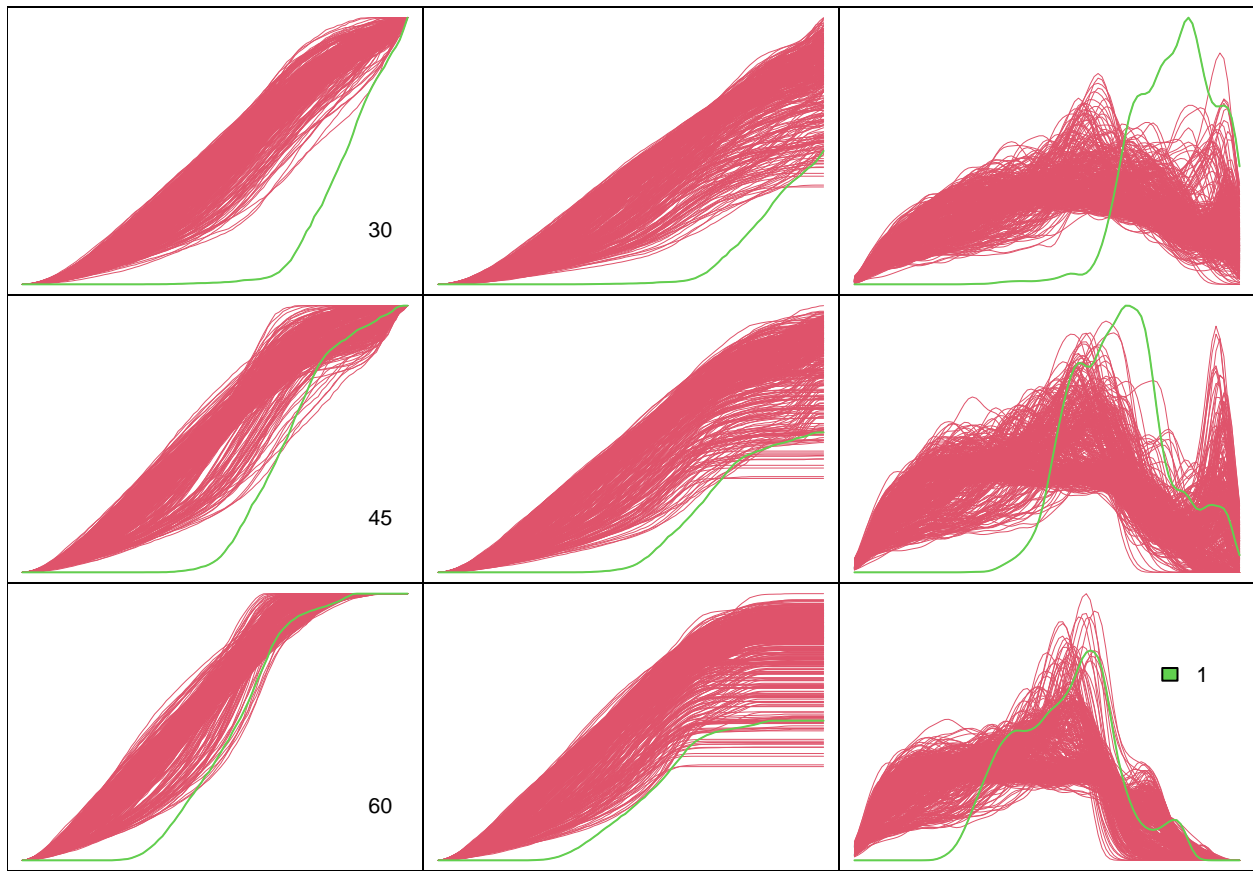


2 of 3

Select Observations – Press ESC when done



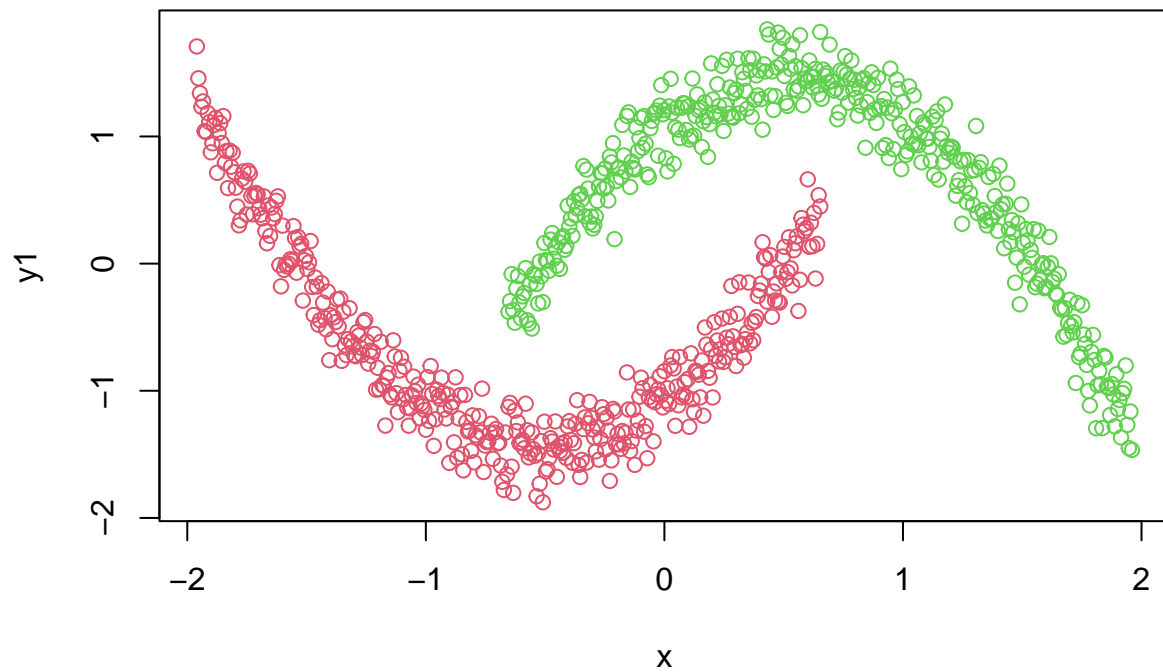
3 of 3



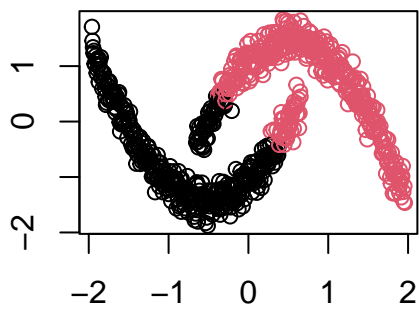
```
## [1] 1
```

```
hm <- scale(m.data)
hm.labels <- m.labels
plot(hm,col=hm.labels)
```



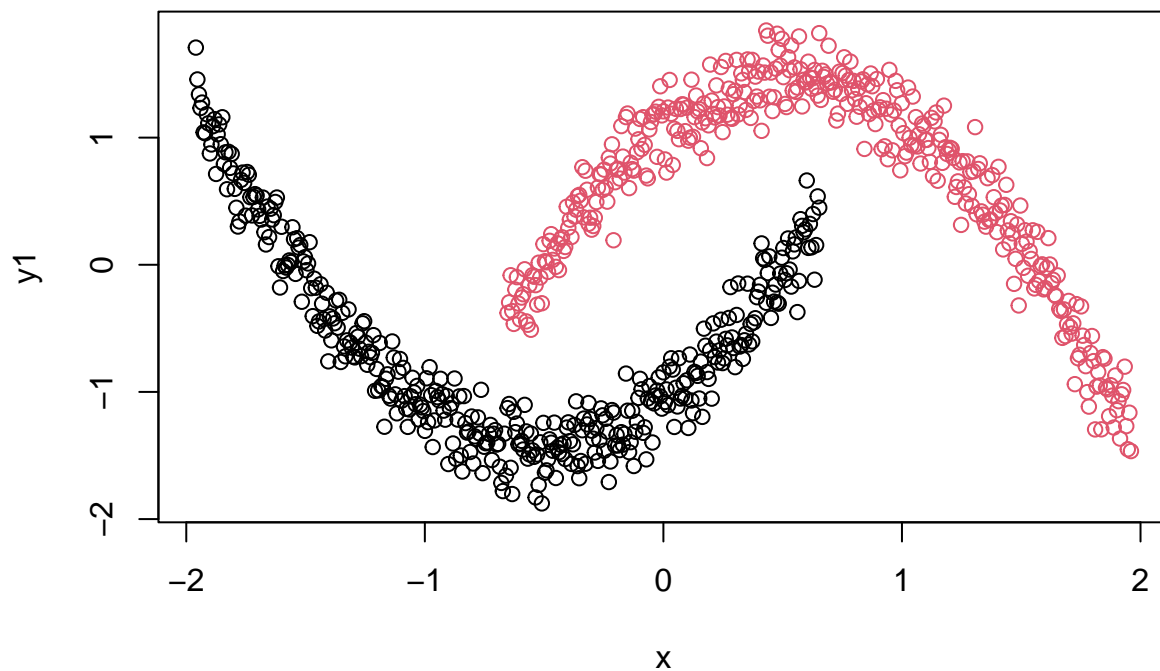


```
km <- kmeans(scale(m.df),2)
plot(scale(m.df),col=km$cluster,xlab='',ylab='')
```



```
m.df <- scale(m.df)
dist.m <- dist(m.df, method = 'euclidean')
hc <- hclust(dist.m, method='single')
fit <- cutree(hc, k = 2)
table(fit)
```

```
## fit
## 1 2
## 401 401
plot(m.df,col=fit)
```



```
m.df <- scale(m.df)
m.df.hd <- matrix(m.df,nrow=length(m.df[,1]),ncol=length(m.df[,1]))
m.df.hd <- m.df.hd %*% matrix(rnorm(2*20),nrow=2,ncol=20)
```

```
data <- data.frame(m.df.hd)
```

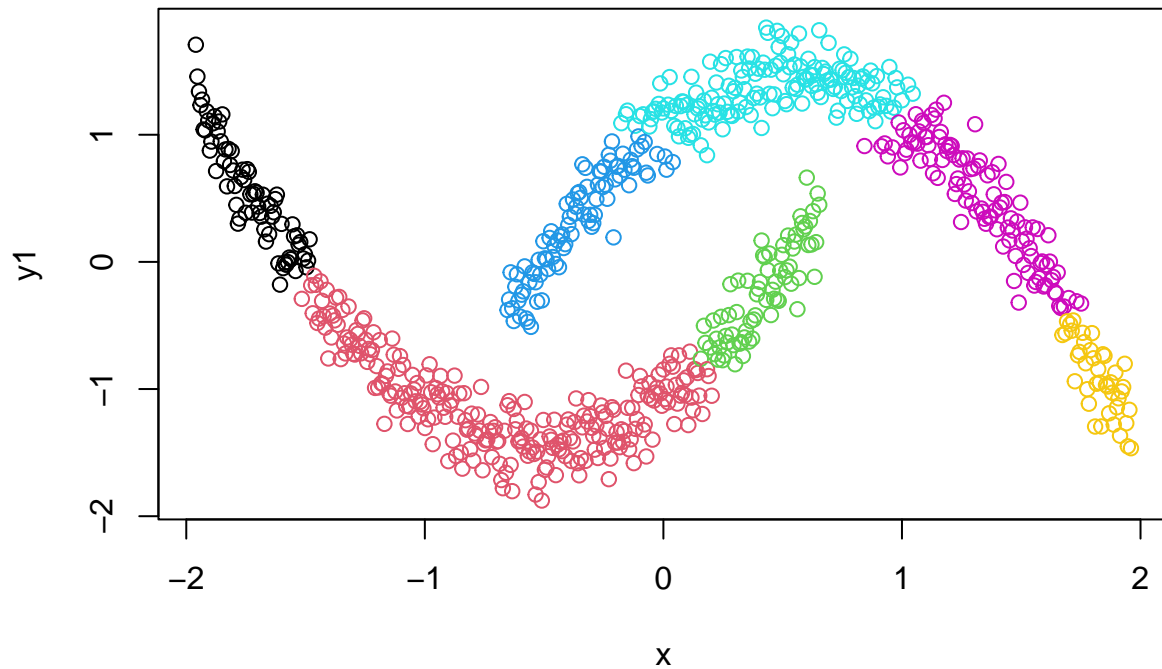
```
m.df.hd <- scale(m.df.hd)
dist.m <- dist(m.df.hd, method = 'euclidean')
hc <- hclust(dist.m, method = "average")
fit <- cutree(hc, k = 7)
table(fit)
```

```
## fit
## 1 2 3 4 5 6 7
## 60 56 263 86 89 207 41
```

```
m.df <- scale(m.df)
dist.m <- dist(m.df, method = 'euclidean')
hc <- hclust(dist.m, method = "average")
fit <- cutree(hc, k = 7)
table(fit)
```

```
## fit
```

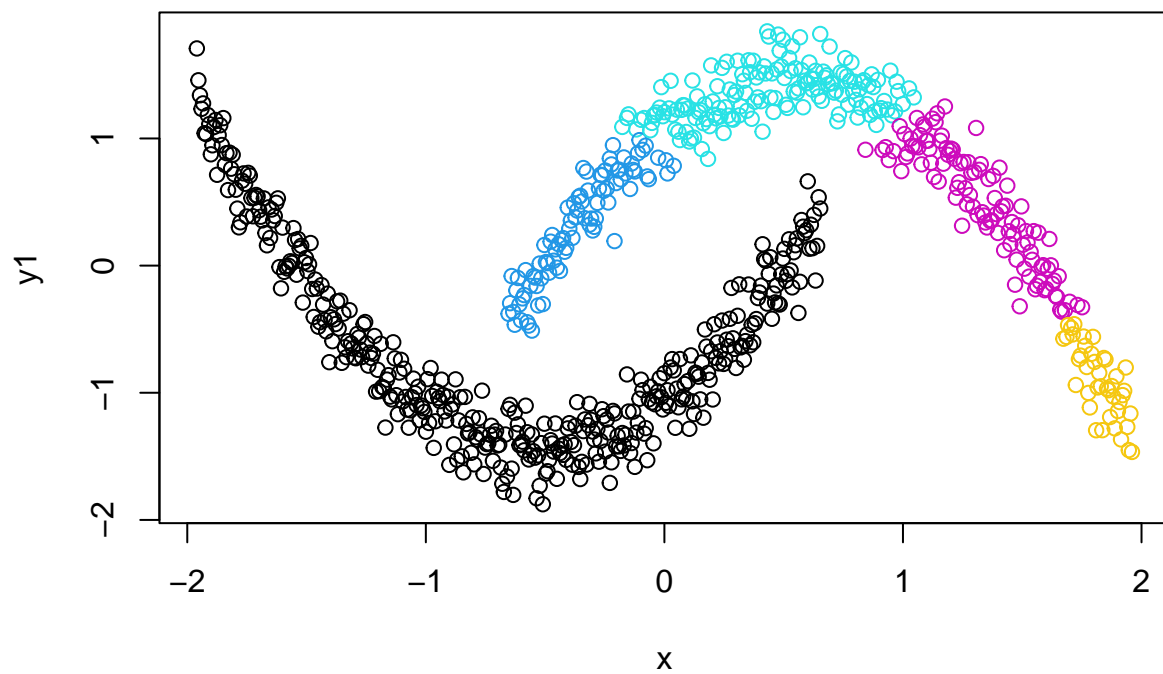
```
## 1 2 3 4 5 6 7
## 73 255 73 89 160 111 41
plot(m.df,col=fit)
```



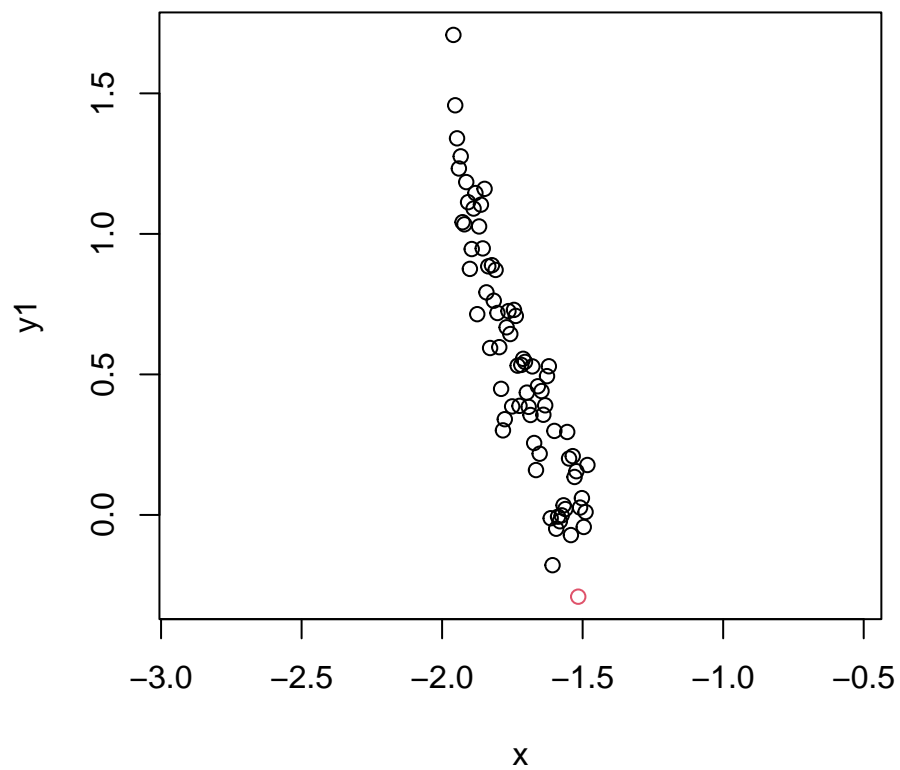
```
m.df <- scale(m.df)
dist.m <- dist(m.df, method = 'euclidean')
hc <- hclust(dist.m, method = "average")
fit <- cutree(hc, k = 7)
table(fit)
```

```
## fit
## 1 2 3 4 5 6 7
## 73 255 73 89 160 111 41
```

```
m.labels <- fit
m.labels[c(which(fit==2),which(fit==3))] <- 1
m.labels[c(which(fit==2),which(fit==3))] <- 1
plot(m.df,col=m.labels)
```

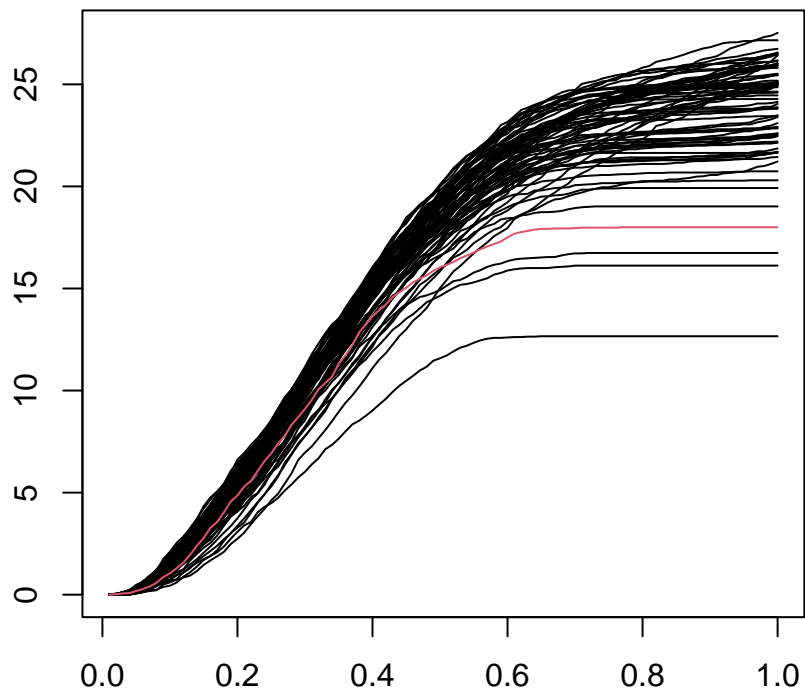


```
plot(m.df[c(which(fit==1),which(fit==2)[1]),],col=show(length(which(fit==1))+1,length(which(fit==1))+1)
```



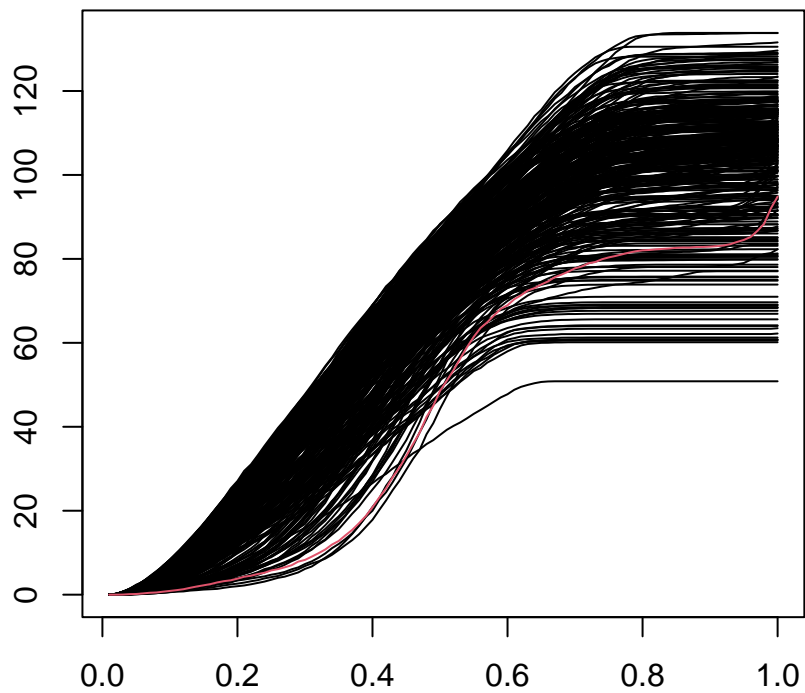
```
m.dqf1 <- m.df[c(which(fit==1),which(fit==2)[1]),]
example1 <- dqf.outlier(m.dqf1)

plot.dqf(example1$dqf2,labels=show(length(which(fit==1))+1,length(which(fit==1))+1))
```

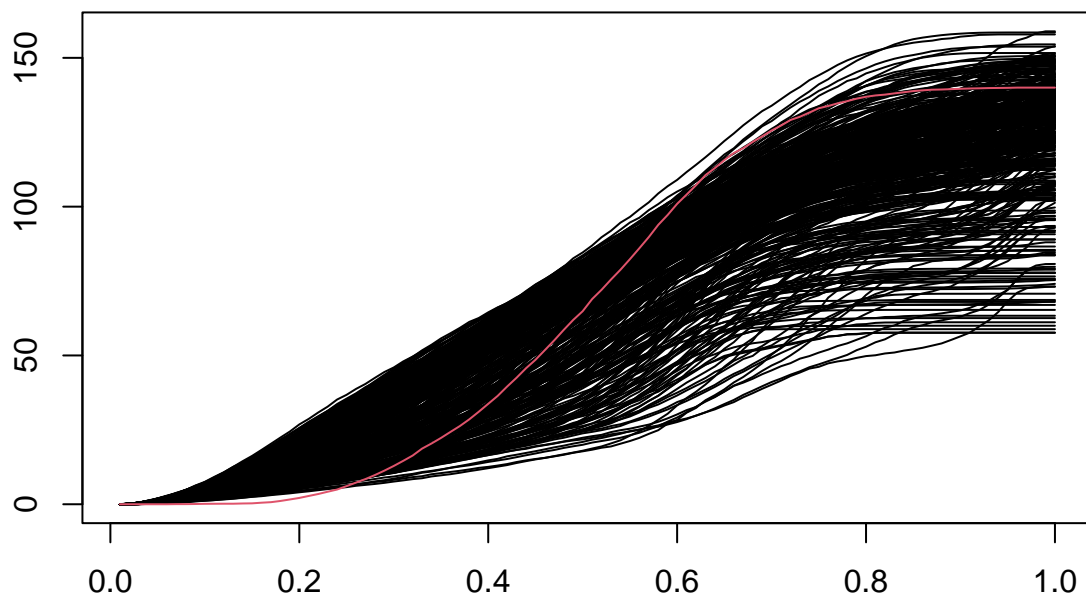


```
m.dqf1 <- m.df[c(which(fit==1),which(fit==2),which(fit==3)[1]),]
example3 <- dqf.outlier(m.dqf1)

plot.dqf(example3$dqf2,labels=show(length(m.dqf1[,1]),length(m.dqf1[,1])))
```

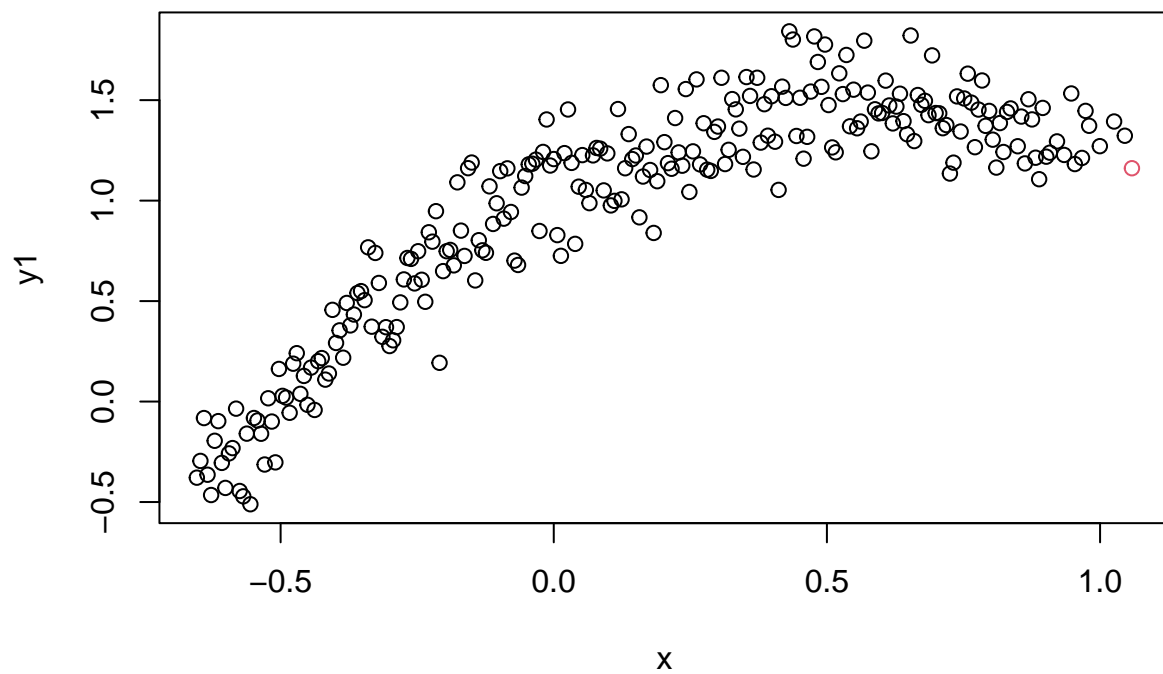


```
m.dqf1 <- m.df[c(which(fit==1),which(fit==2),which(fit==3),which(fit==4)[1]),]
example2 <- dqf.outlier(m.dqf1)
plot.dqf(example2$dqf2,labels=show(length(m.dqf1[,1]),length(m.dqf1[,1])))
```

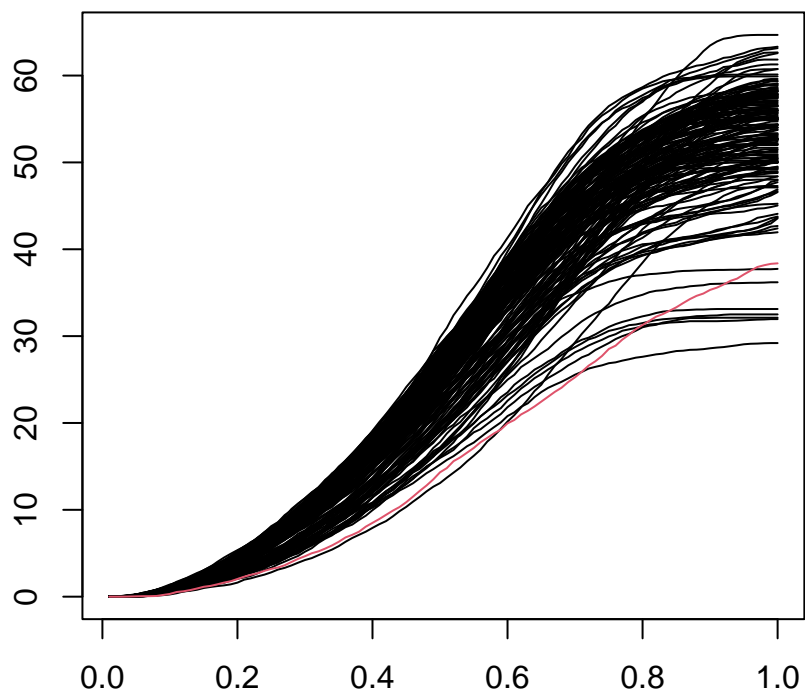


```
plot(m.df[c(which(fit==4),which(fit==5),which(fit==6)[14]),],col=show(length(c(which(fit==4),which(fit==
```

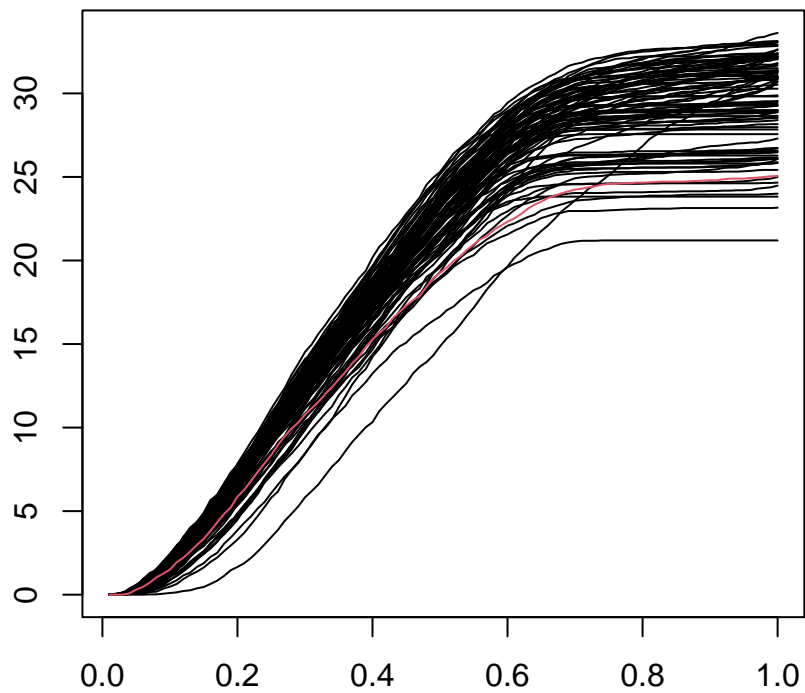




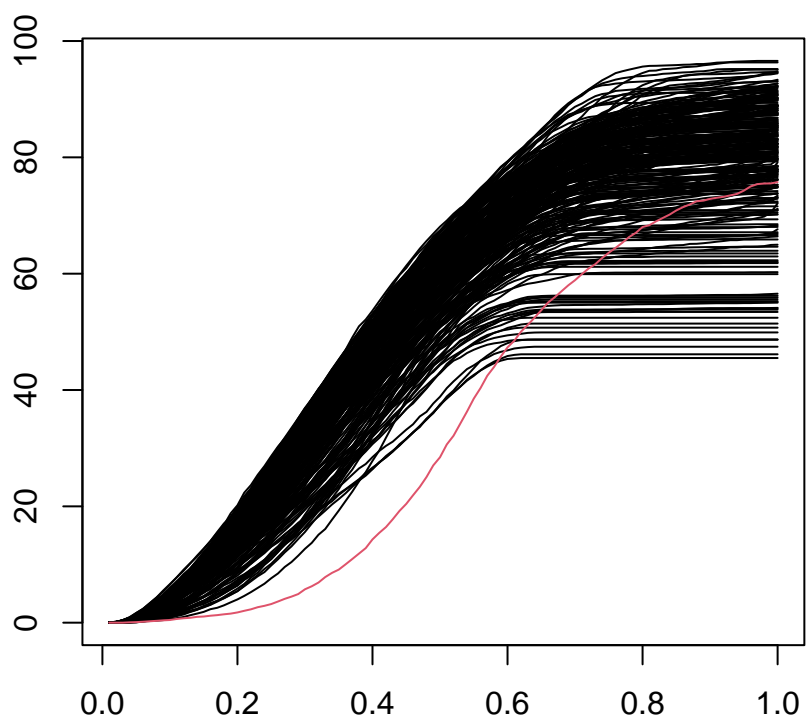
```
m.dqf1 <- m.df[c(which(fit==5),which(fit==6)[14]),]
example2 <- dqf.outlier(m.dqf1)
plot.dqf(example2$dqf2, labels=show(length(m.dqf1[,1]),length(m.dqf1[,1])))
```



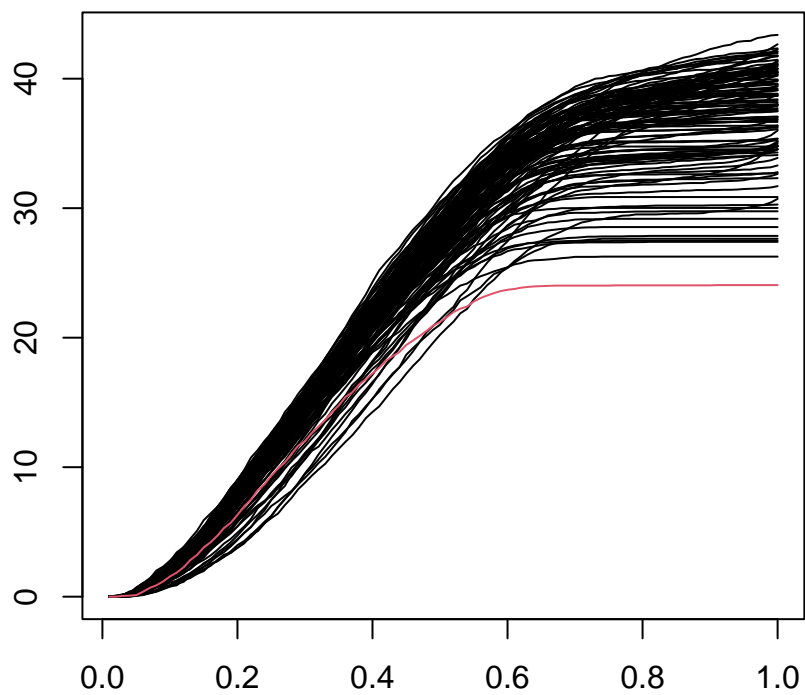
```
m.dqf1 <- m.df[c(which(fit==4),which(fit==5)[1]),]
example2 <- dqf.outlier(m.dqf1)
plot.dqf(example2$dqf2,labels=show(length(m.dqf1[,1]),length(m.dqf1[,1])))
```



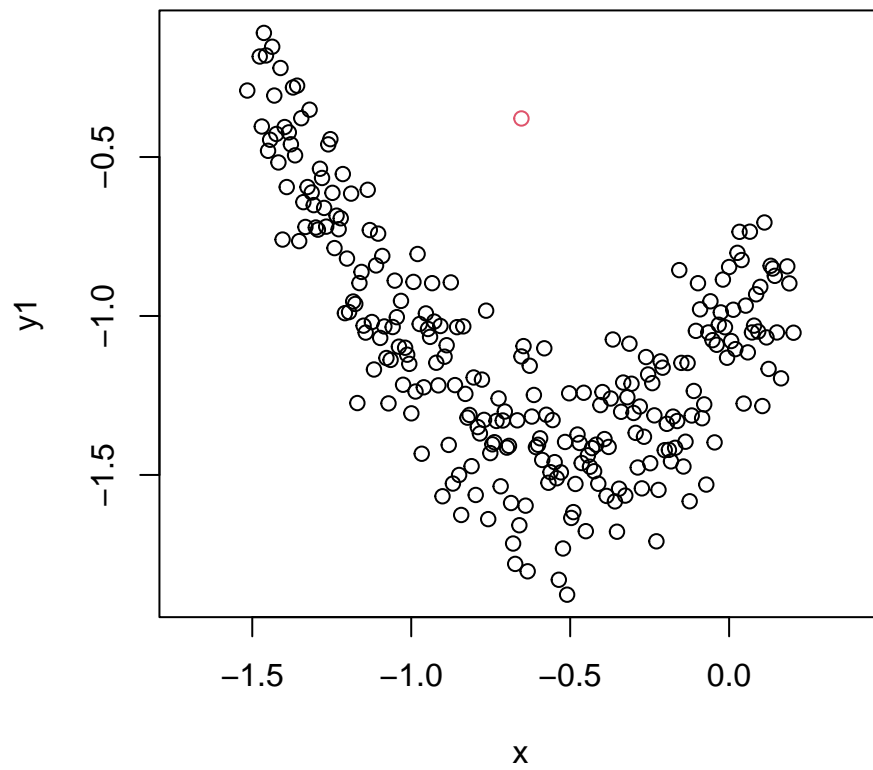
```
m.dqf1 <- m.df[c(which(fit==4),which(fit==5),which(fit==6)[1]),]
example2 <- dqf.outlier(m.dqf1)
plot.dqf(example2$dqf2,labels=show(length(m.dqf1[,1]),length(m.dqf1[,1])))
```



```
m.dqf1 <- m.df[c(which(fit==6),which(fit==7)[1]),]
example2 <- dqf.outlier(m.dqf1)
plot.dqf(example2$dqf2,labels=show(length(m.dqf1[,1]),length(m.dqf1[,1])))
```

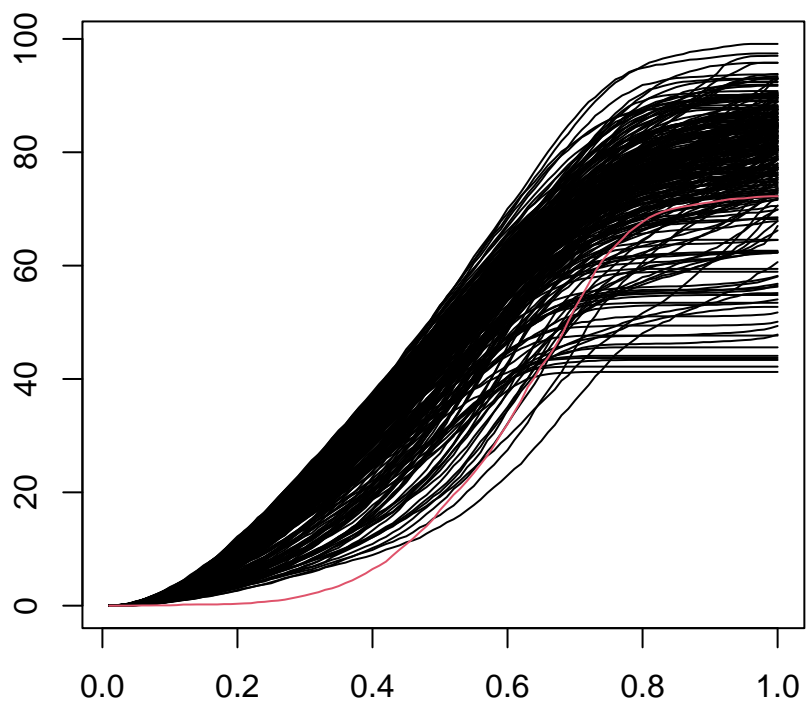


```
plot(m.df[c(which(fit==2),which(fit==4)[1]),],asp=1,col=show(length(which(fit==2))+1,length(which(fit==4))))
```



```
m.dqf2 <- m.df[c(which(fit==2),which(fit==4)[1]),]
example2 <- dqf.outlier(m.dqf2)
```

```
plot.dqf(example2$dqf2,labels=show(length(which(fit==2)),length(which(fit==2))+1))
```

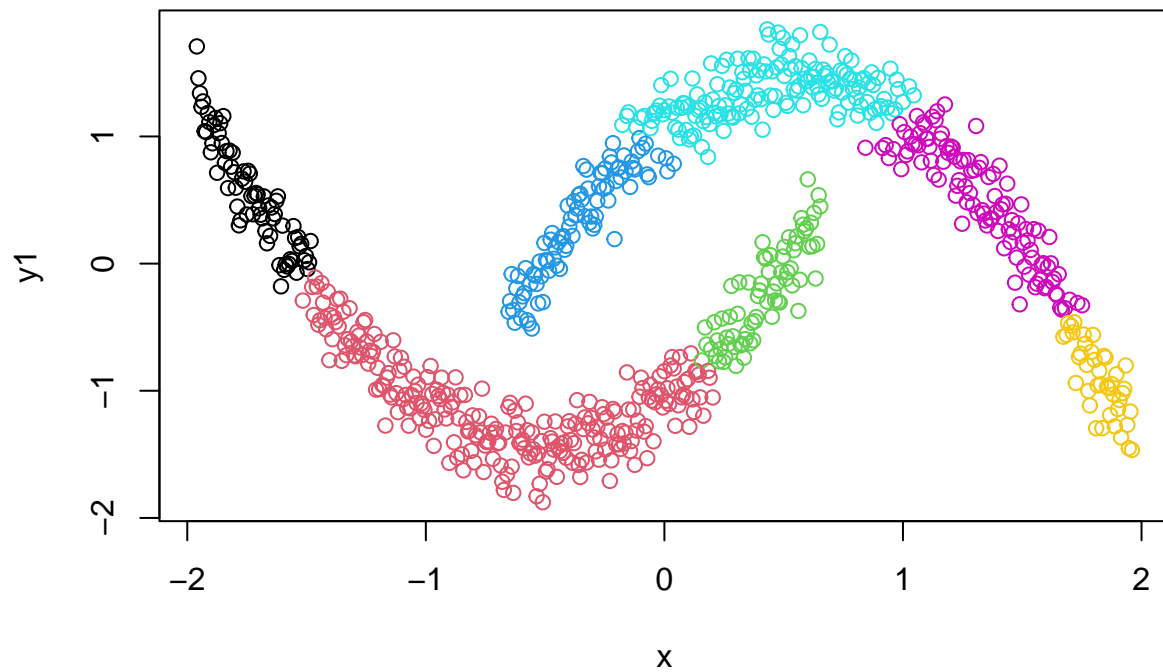


### adding dimensions to half moon

```
m.df <- scale(m.df)
dist.m <- dist(m.df, method = 'euclidean')
hc <- hclust(dist.m, method = "average")
fit <- cutree(hc, k = 7)
table(fit)
```

```
## fit
##  1  2  3  4  5  6  7
## 73 255 73 89 160 111 41
```

```
plot(m.df, col=fit)
```

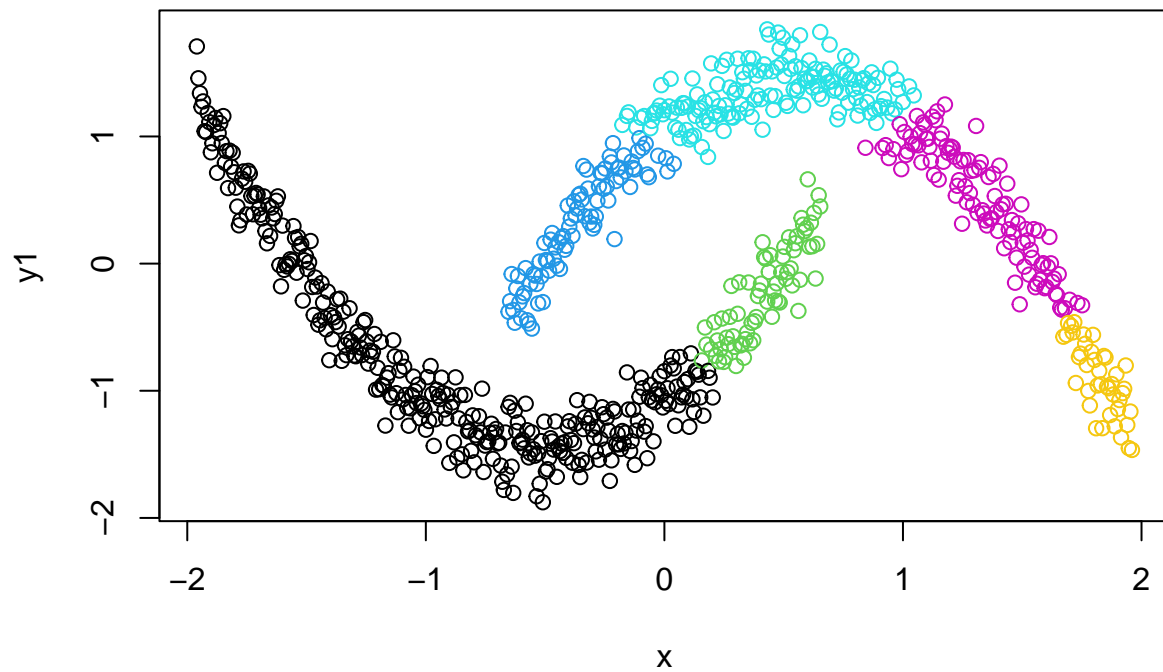


```
m.df <- scale(m.df)
dist.m <- dist(m.df, method = 'euclidean')
hc <- hclust(dist.m, method = "average")
fit <- cutree(hc, k = 7)
table(fit)
```

```
## fit
##  1  2  3  4  5  6  7
## 73 255 73 89 160 111 41
```

```
labs <- fit
labs[which(fit==2)] <- 1
plot(m.df, col=labs)
```

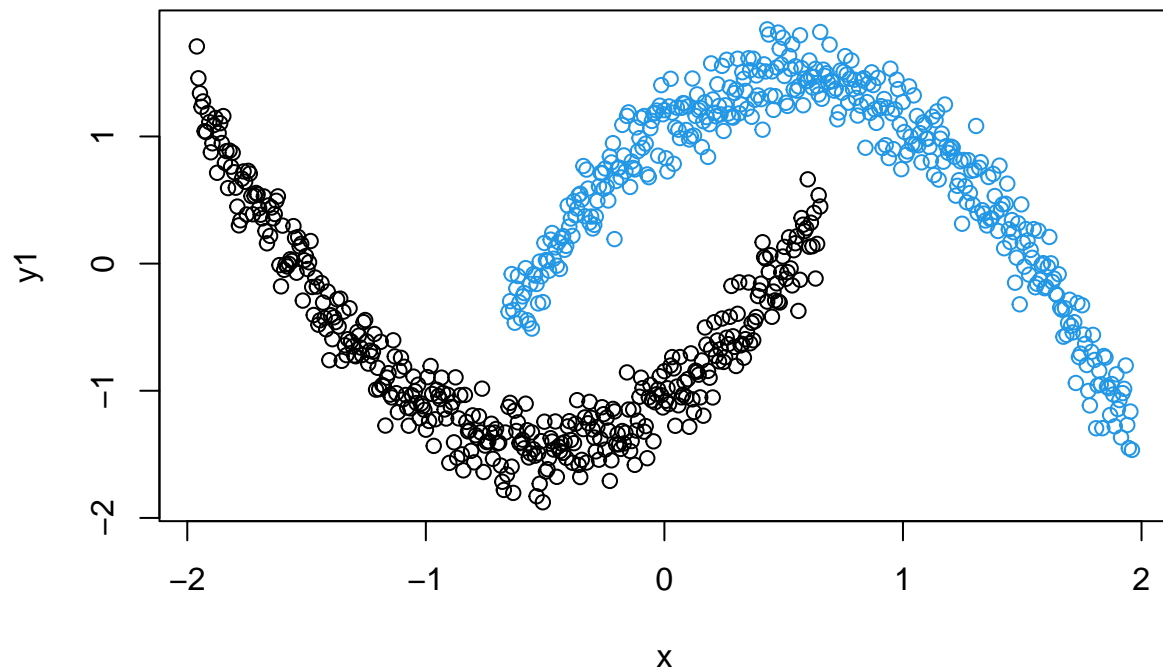




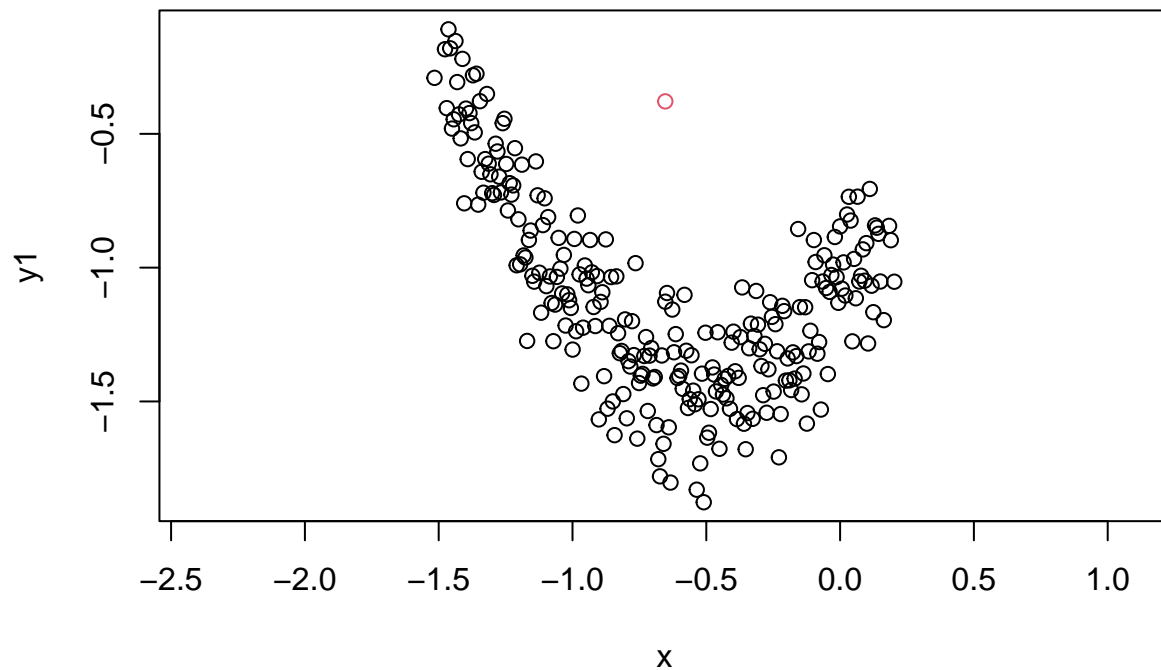
```
m.df <- scale(m.df)
dist.m <- dist(m.df, method = 'euclidean')
hc <- hclust(dist.m, method = "average")
fit <- cutree(hc, k = 7)
table(fit)
```

```
## fit
##  1  2  3  4  5  6  7
## 73 255 73 89 160 111 41
```

```
labs <- fit
labs[which(fit==2)] <- 1
labs[which(fit==5)] <- 4
labs[which(fit==3)] <- 1
labs[which(fit==6)] <- 4
labs[which(fit==7)] <- 4
plot(m.df, col=labs)
```



```
m.df <- scale(m.df)
ex2 <- m.df[c(which(fit==2),which(fit==4)[1]),]
plot(ex2,asp=1,col=show(length(which(fit==2))+1,length(which(fit==4))+1))
```



```
exdf2.5 <- scale(ex2)
for(i in 1:2){
  exdf2.5 <- cbind(exdf2.5,rnorm(52))
}
```

```
## Warning in cbind(exdf2.5, rnorm(52)): number of rows of result is not a multiple
## of vector length (arg 2)
```

```
## Warning in cbind(exdf2.5, rnorm(52)): number of rows of result is not a multiple
## of vector length (arg 2)
```

```
exdf2.5 <- data.matrix(exdf2.5)
M1 <- matrix(rnorm(4*14),nrow=4,ncol=14)
deez <- exdf2.5 %*% M1
deez <- data.frame(deez)
deez <- scale(deez)
```

```
exdf2.0 <- scale(ex2)
exdf2.0 <- data.matrix(exdf2.0)
exdf2.0 <- cbind(exdf2.0,rnorm(52))
```

```
## Warning in cbind(exdf2.0, rnorm(52)): number of rows of result is not a multiple
## of vector length (arg 2)
```

```
exdf2.0 <- cbind(exdf2.0,rnorm(52))
```

```
## Warning in cbind(exdf2.0, rnorm(52)): number of rows of result is not a multiple
## of vector length (arg 2)
```

```

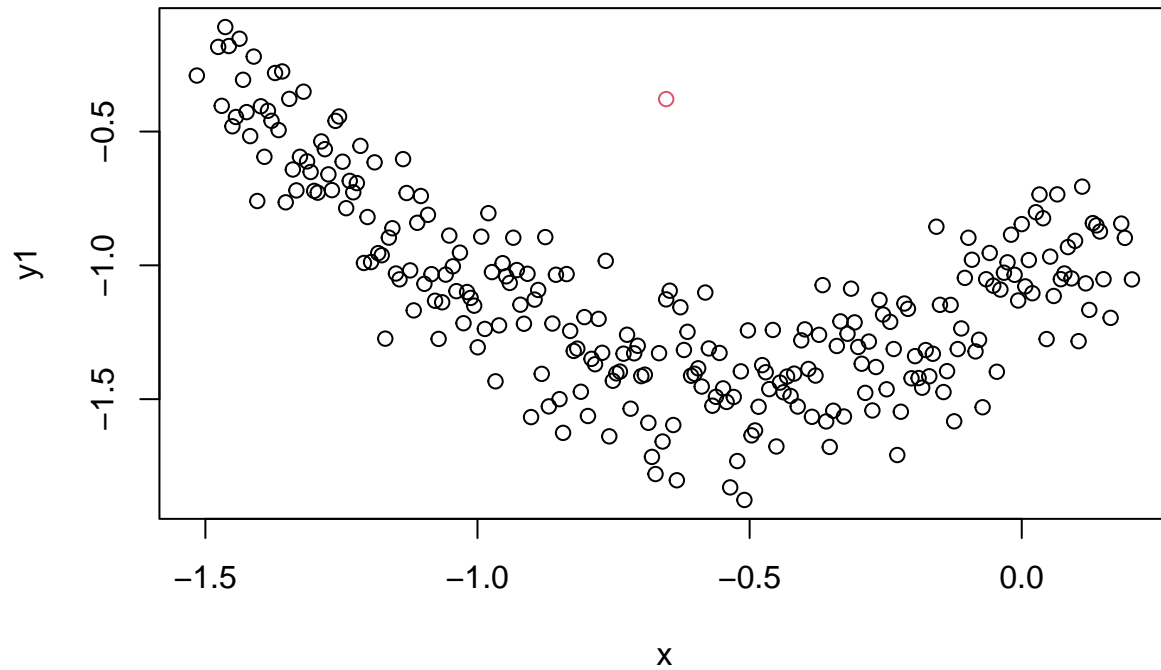
M1 <- matrix(rnorm(4*14),nrow=4,ncol=14)
deez <- exdf2.0 %*% M1
deez <- data.frame(deez)
deez <- scale(deez)

```

```

plot(ex2,col=show(256,256:256))

```



```

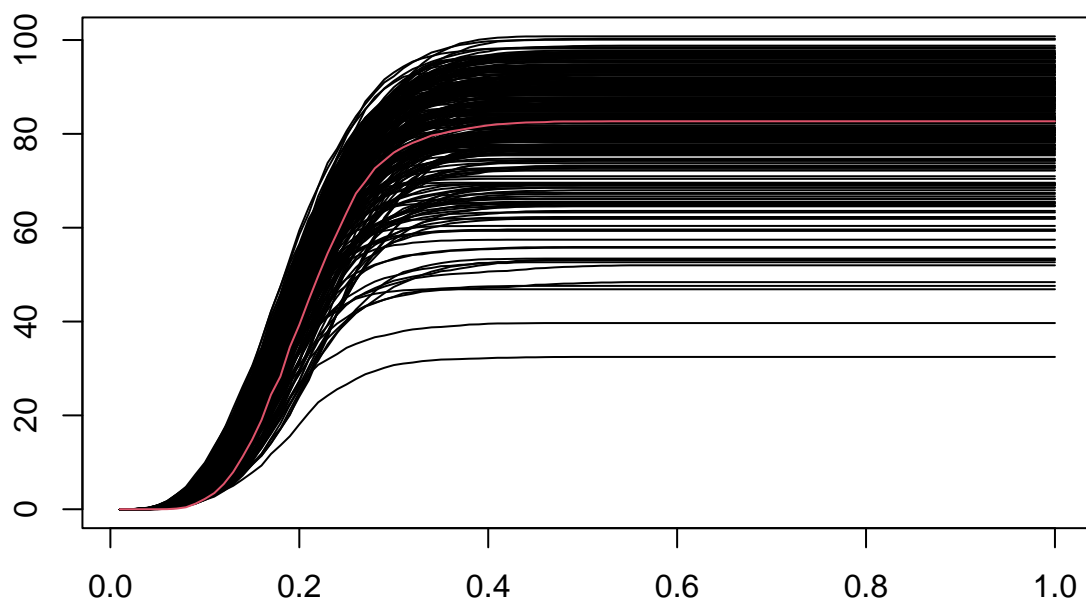
bruh <- dqf.outlier(deez,g.scale=10)

```

```

plot.dqf(bruh$dqf2,labels=show(256,256:256))

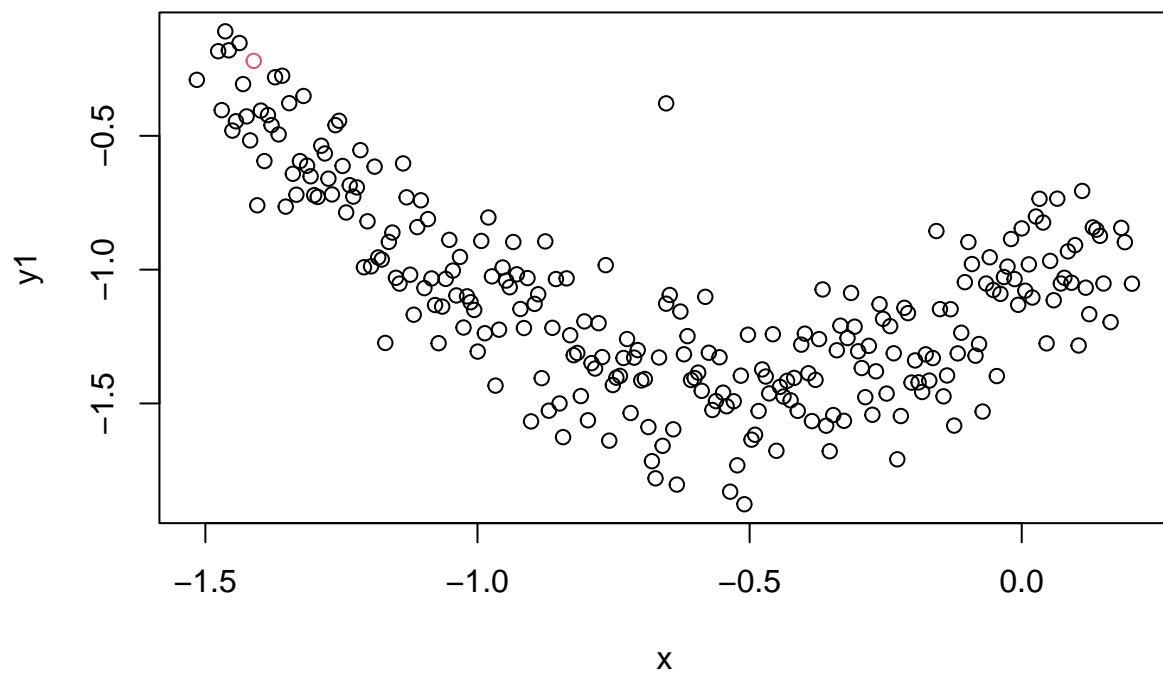
```



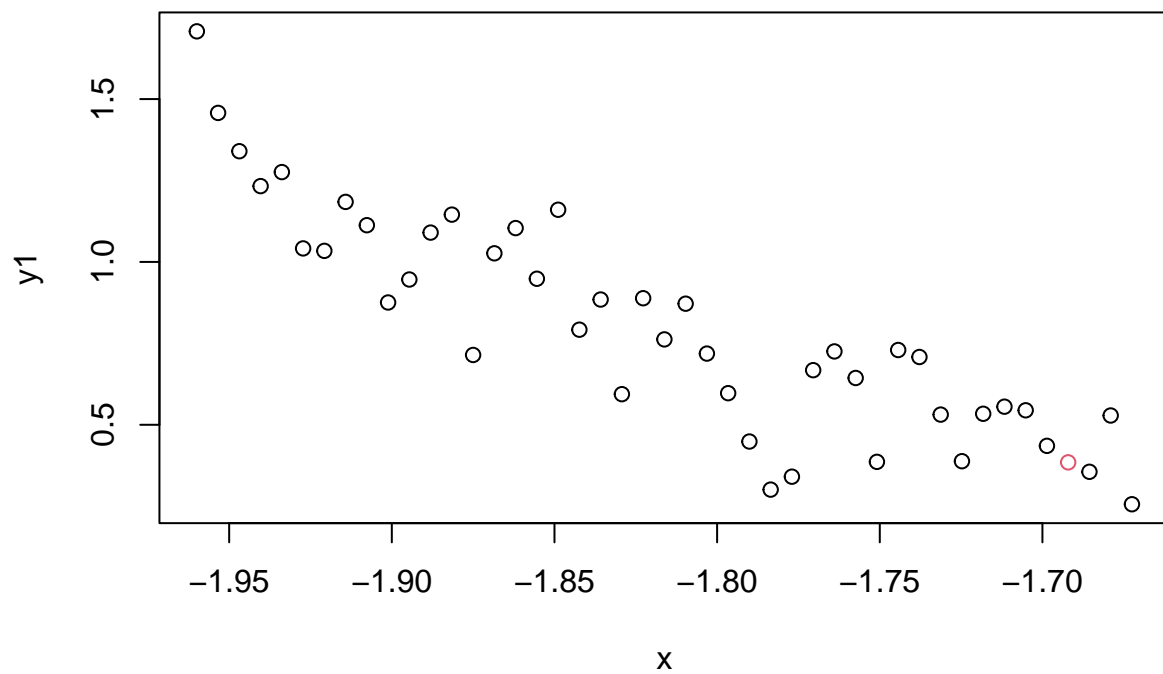
```
dist.m <- dist(deez, method = 'euclidean')
hc <- hclust(dist.m, method = "single")
fit <- cutree(hc, k = 2)
table(fit)
```

```
## fit
##   1  2
## 255  1
```

```
plot(ex2,col=fit)
```



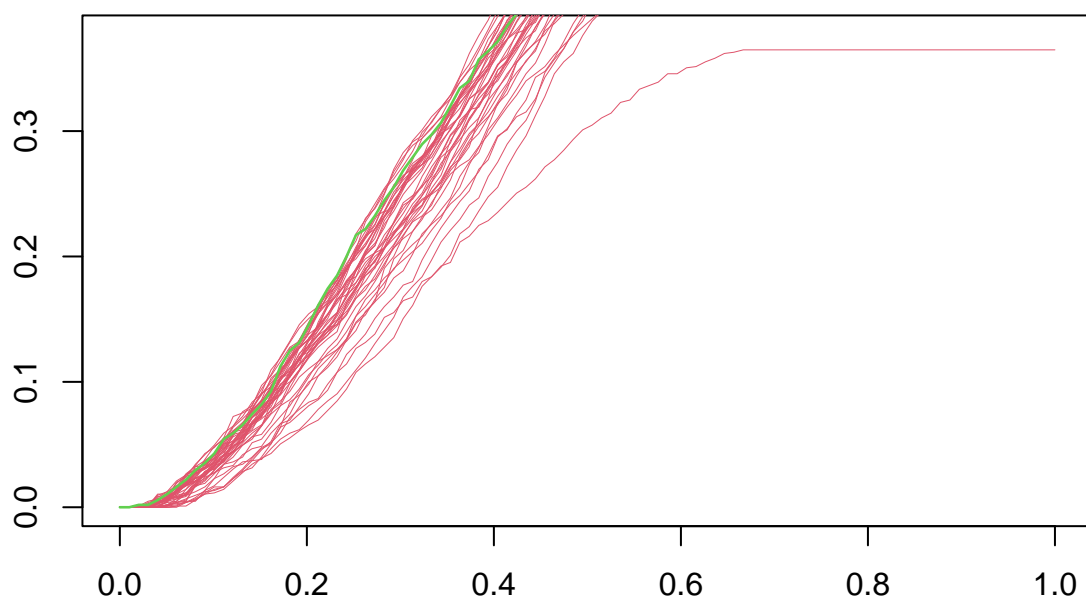
```
label <- rep(1,45); label[42] <- 2  
plot(hm[1:45,],col=label)
```



```
hm.dqf <- dqf.outlier(hm[1:42,])
```

```
dqf.explore(hm.dqf, show=42)
```

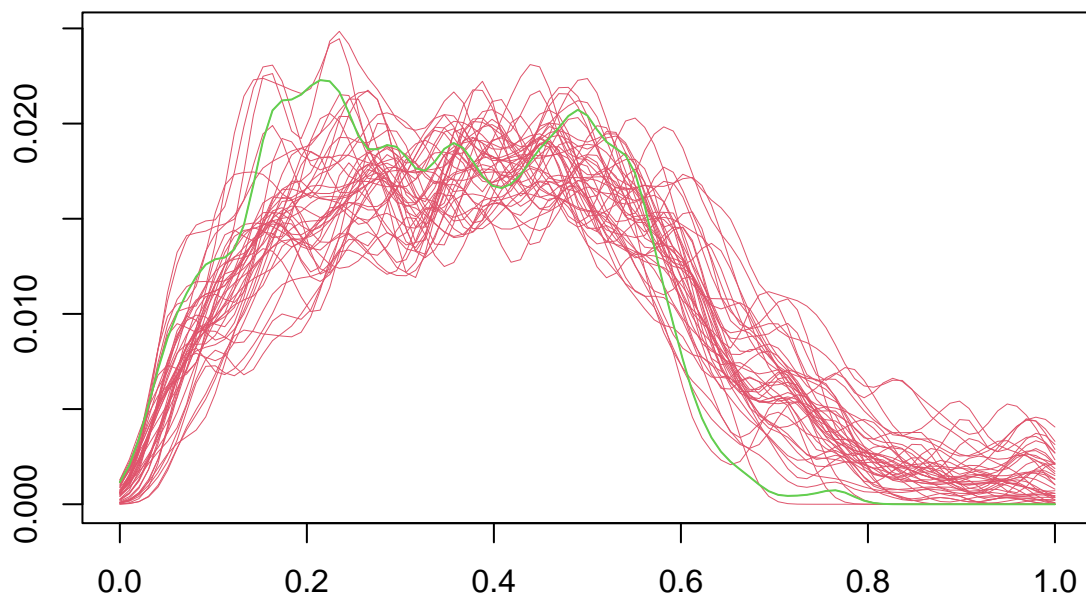
**Select Observations – Press ESC when done**



1 of 3

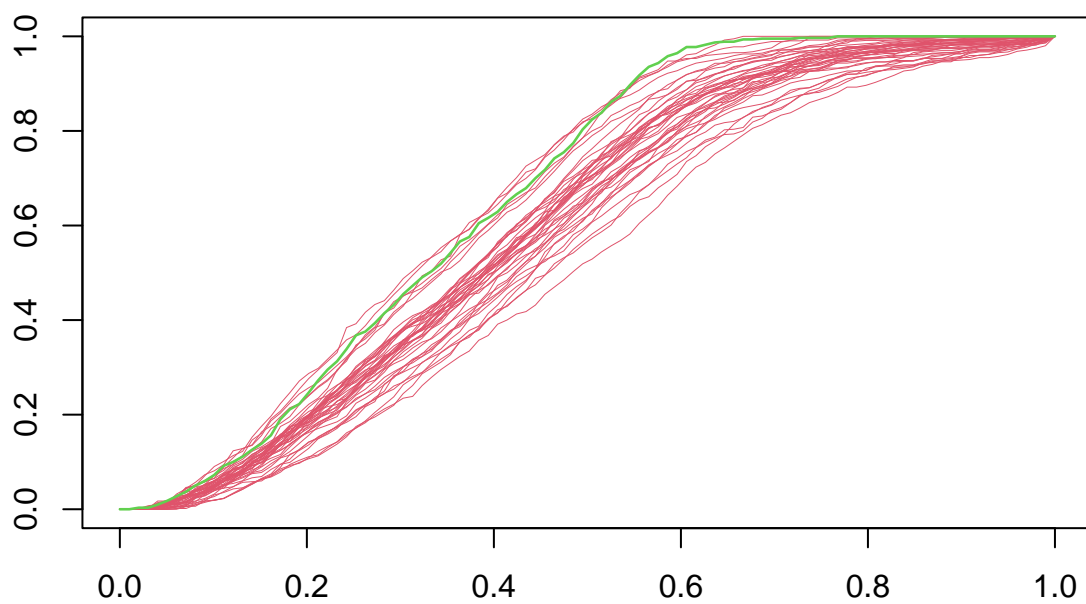


**Select Observations – Press ESC when done**

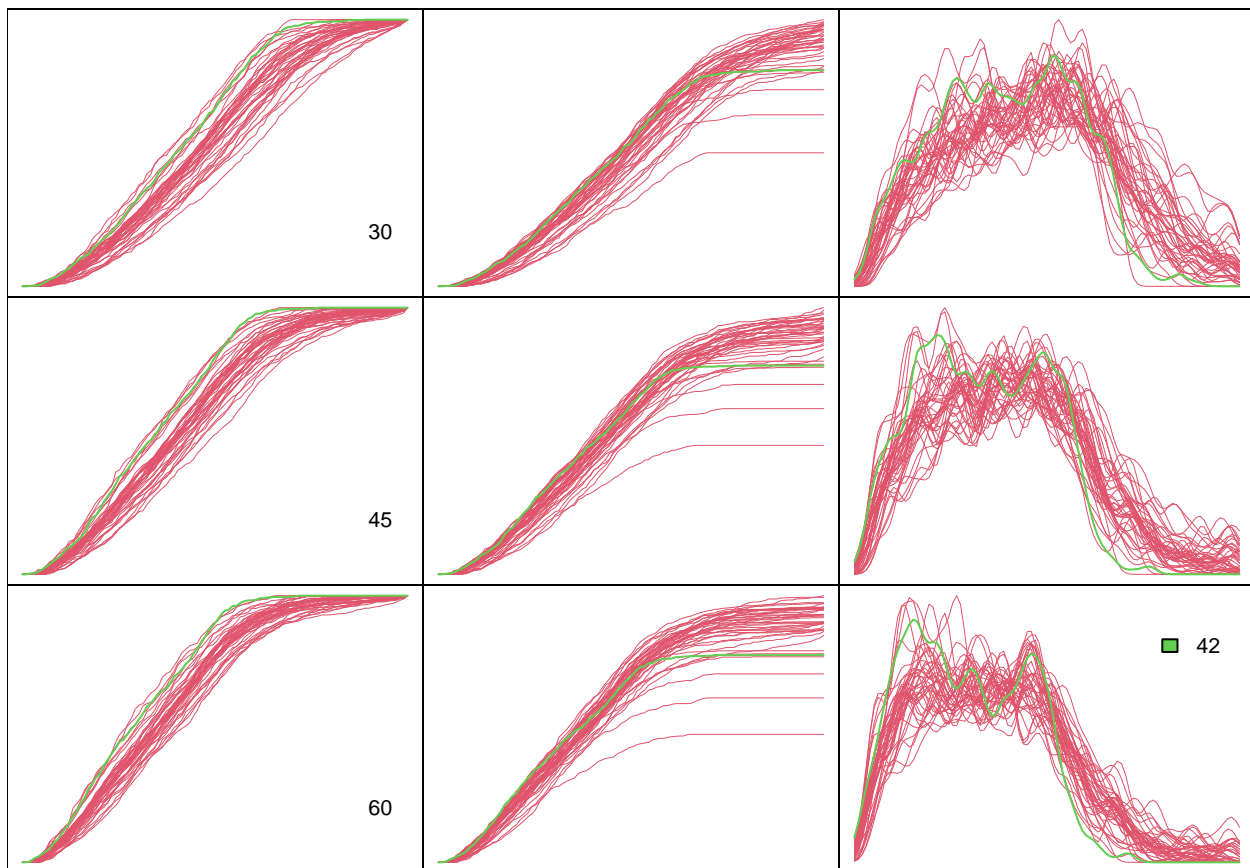


2 of 3

**Select Observations – Press ESC when done**



3 of 3



```
## [1] 42
```

## Line Example

```
length(seq(-20,20,1))
```

```
## [1] 41
```

```
set.seed(47)
```

```
x <- seq(-20,20,.5)
```

```
y <- x^2 + rnorm(41)
```

```
## Warning in x^2 + rnorm(41): longer object length is not a multiple of shorter
```

```
## object length
```

```
x <- x + rnorm(41)
```

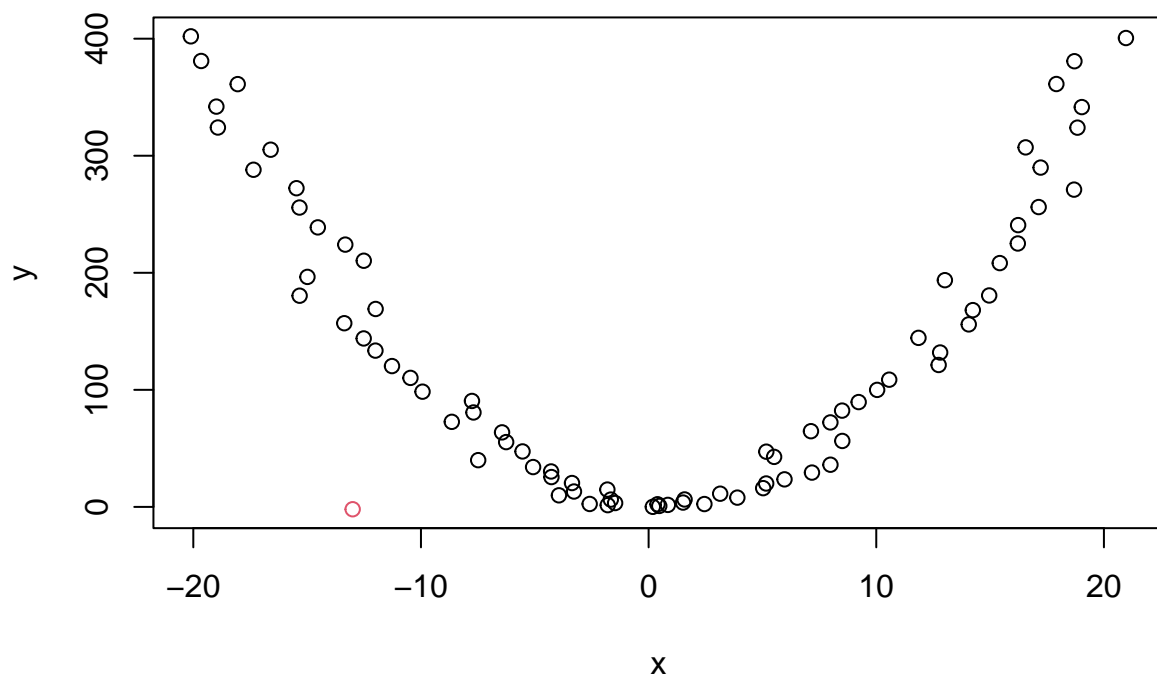
```
## Warning in x + rnorm(41): longer object length is not a multiple of shorter
```

```
## object length
```

```
x <- c(x,-13)
```

```
y <- c(y,-2)
```

```
plot(x,y,col=c(rep(1,81),2))
```



```
parabola <- data.frame(x,y)
```

```
parabola.dqf <- dqf.outlier(parabola)
```

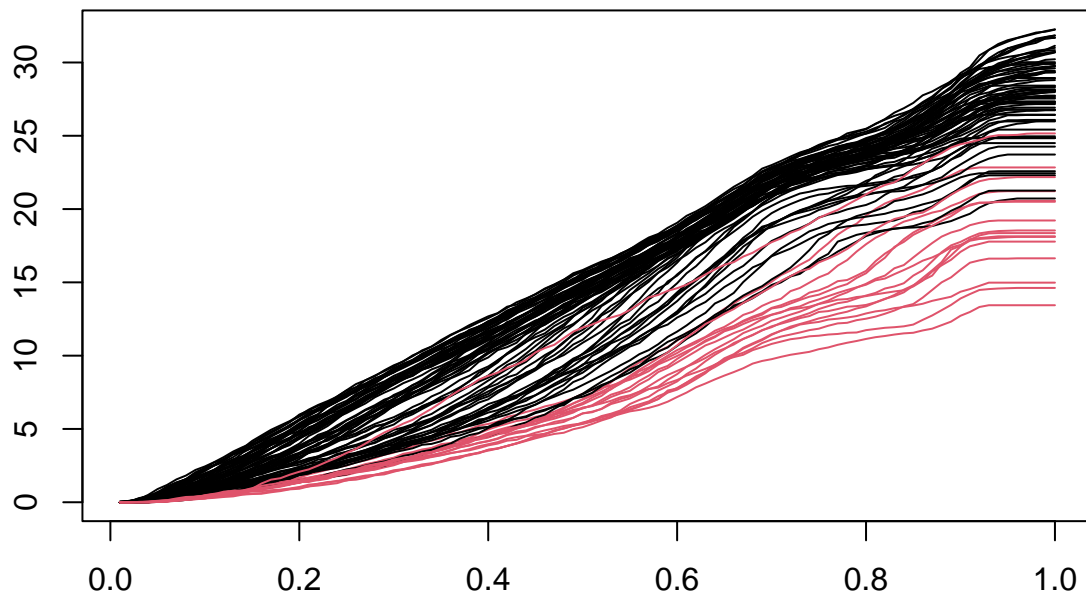
```
labels <- rep(1,10)
```

```
labels[1:5] <- 2
```

```
labels
```

```
## [1] 2 2 2 2 2 1 1 1 1 1
```

```
plot.dqf(parabola.dqf$dqf2, labels=show(length(parabola.dqf$dqf2), c(1:8, 75:83)))
```



## Circle Dataset

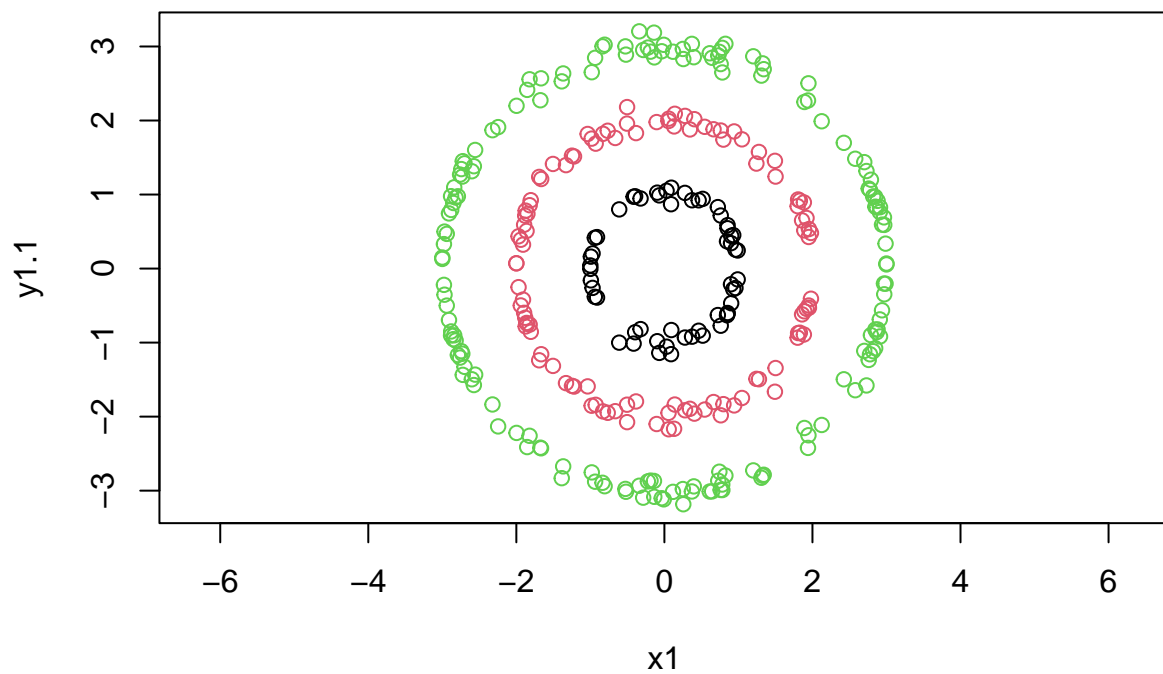
```
set.seed(4747)
x1 <- c(runif(20,-1,1),seq(-1,-.9,.03),seq(.9,1,.03))
y1.1 <- sqrt(1-x1^2) + rnorm(length(x1),0,.1)
y1.2 <- -sqrt(1-x1^2) + rnorm(length(x1),0,.1)
c.data <- rbind(cbind(x1,y1.1),cbind(x1,y1.2))

x2 <- c(runif(40,-2,2),seq(-2,-1.8,.03),seq(1.8,2,.03))
y2.1 <- sqrt(4-x2^2) + rnorm(length(x2),0,.1)
y2.2 <- -sqrt(4-x2^2) + rnorm(length(x2),0,.1)
c.data <- rbind(c.data,rbind(cbind(x2,y2.1),cbind(x2,y2.2)))

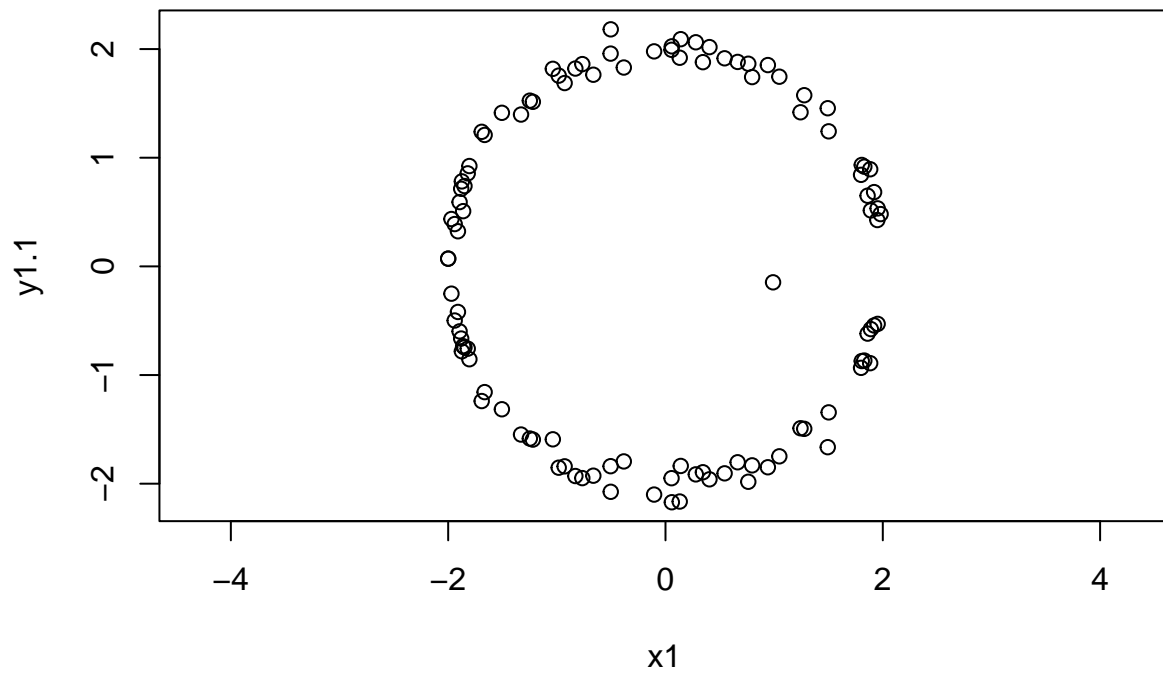
x3 <- c(runif(60,-3,3),seq(-3,-2.7,.03),seq(2.7,3,.03))
y3.1 <- sqrt(9-x3^2) + rnorm(length(x3),0,.1)
y3.2 <- -sqrt(9-x3^2) + rnorm(length(x3),0,.1)
c.data <- rbind(c.data,rbind(cbind(x3,y3.1),cbind(x3,y3.2)))

c.labels <- c(rep(1,2*length(x1)),rep(2,2*length(x2)),rep(3,2*length(x3)))

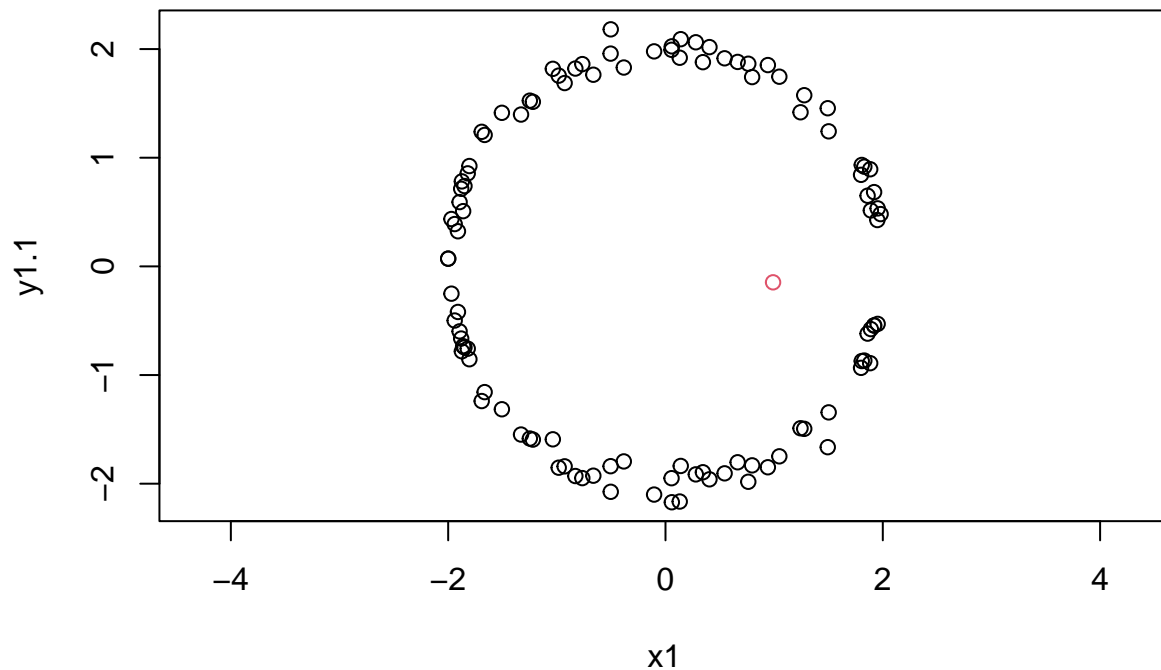
plot(c.data,asp=1,col=c.labels)
```



```
d1 <- length(x1)*2  
d2 <- length(x2)*2  
plot(c.data[d1:(d2*1.5),],asp=1)
```



```
c.outlier <- c.data[d1:(d2*1.5),]  
c.outlier <- rbind(c.outlier,c.outlier[length(c.outlier[,1]),])  
plot(c.outlier,asp=1,col=show(length(c.outlier[,1]),1:1))
```



```
c.dqf <- dqf.outlier(c.outlier)
```

```
length(c.outlier[,1])
```

```
## [1] 108
```

```
c.dqf$dqf2
```

```
##      [,1] [,2] [,3] [,4] [,5] [,6] [,7] [,8] [,9] [,10] [,11] [,12] [,13]
## [1,] 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
## [2,] 0.02 0.04 0.10 0.14 0.26 0.36 0.46 0.54 0.76 0.94 1.06 1.18 1.24
## [3,] 0.00 0.00 0.02 0.02 0.10 0.18 0.34 0.44 0.60 0.68 0.90 0.98 1.16
## [4,] 0.02 0.02 0.04 0.12 0.18 0.26 0.42 0.52 0.64 0.76 0.88 1.00 1.12
## [5,] 0.00 0.00 0.04 0.08 0.22 0.32 0.48 0.54 0.64 0.74 0.96 1.06 1.24
## [6,] 0.02 0.02 0.06 0.14 0.22 0.28 0.40 0.50 0.72 0.86 1.12 1.30 1.40
## [7,] 0.00 0.00 0.02 0.06 0.16 0.22 0.24 0.38 0.52 0.60 0.70 0.76 0.82
## [8,] 0.00 0.00 0.06 0.08 0.12 0.20 0.34 0.42 0.50 0.62 0.76 0.92 1.02
## [9,] 0.00 0.00 0.02 0.08 0.08 0.20 0.36 0.42 0.46 0.60 0.64 0.80 0.98
## [10,] 0.00 0.00 0.06 0.10 0.20 0.24 0.30 0.34 0.48 0.60 0.72 0.86 0.94
## [11,] 0.00 0.00 0.02 0.06 0.14 0.22 0.32 0.42 0.42 0.48 0.48 0.52 0.56
## [12,] 0.00 0.00 0.04 0.06 0.14 0.20 0.36 0.42 0.56 0.60 0.80 0.90 1.10
## [13,] 0.00 0.00 0.06 0.18 0.24 0.36 0.52 0.52 0.70 0.82 0.90 1.08 1.16
## [14,] 0.02 0.02 0.04 0.08 0.14 0.22 0.26 0.34 0.40 0.52 0.58 0.60 0.66
## [15,] 0.00 0.00 0.08 0.16 0.28 0.38 0.50 0.54 0.70 0.82 0.92 1.06 1.20
## [16,] 0.00 0.00 0.06 0.10 0.16 0.22 0.24 0.36 0.44 0.54 0.60 0.70 0.78
## [17,] 0.00 0.00 0.06 0.16 0.24 0.28 0.52 0.60 0.70 0.82 0.90 0.94 1.08
## [18,] 0.00 0.00 0.08 0.14 0.22 0.28 0.42 0.44 0.54 0.68 0.76 0.86 1.00
```



##	[19,]	0.00	0.00	0.00	0.00	0.06	0.10	0.14	0.22	0.28	0.34	0.44	0.58	0.70
##	[20,]	0.00	0.00	0.10	0.16	0.22	0.28	0.50	0.60	0.74	0.88	1.02	1.16	1.26
##	[21,]	0.00	0.00	0.02	0.04	0.04	0.08	0.20	0.32	0.44	0.52	0.62	0.74	0.86
##	[22,]	0.00	0.00	0.02	0.04	0.04	0.08	0.10	0.20	0.22	0.24	0.30	0.36	0.42
##	[23,]	0.00	0.00	0.12	0.22	0.24	0.30	0.54	0.68	0.82	0.96	1.18	1.28	1.44
##	[24,]	0.00	0.00	0.00	0.04	0.06	0.16	0.48	0.48	0.54	0.70	0.82	1.00	1.10
##	[25,]	0.00	0.00	0.00	0.02	0.04	0.10	0.24	0.34	0.42	0.52	0.62	0.80	0.92
##	[26,]	0.02	0.06	0.12	0.16	0.18	0.24	0.30	0.38	0.60	0.72	0.80	0.90	1.00
##	[27,]	0.00	0.00	0.08	0.12	0.16	0.24	0.38	0.44	0.50	0.58	0.70	0.84	0.96
##	[28,]	0.02	0.02	0.02	0.06	0.08	0.14	0.22	0.38	0.44	0.62	0.66	0.70	0.88
##	[29,]	0.02	0.02	0.02	0.04	0.14	0.24	0.26	0.40	0.48	0.54	0.64	0.68	0.76
##	[30,]	0.00	0.00	0.02	0.02	0.10	0.12	0.14	0.20	0.30	0.38	0.52	0.60	0.66
##	[31,]	0.02	0.02	0.06	0.14	0.30	0.34	0.50	0.66	0.74	0.90	1.02	1.20	1.26
##	[32,]	0.00	0.00	0.06	0.10	0.20	0.22	0.36	0.42	0.58	0.70	0.86	0.92	1.10
##	[33,]	0.00	0.02	0.06	0.08	0.14	0.16	0.26	0.38	0.48	0.58	0.68	0.74	0.88
##	[34,]	0.02	0.02	0.06	0.10	0.20	0.24	0.32	0.48	0.64	0.72	0.86	0.94	1.10
##	[35,]	0.00	0.00	0.08	0.10	0.20	0.26	0.38	0.48	0.58	0.68	0.78	0.90	0.94
##	[36,]	0.02	0.06	0.10	0.18	0.22	0.34	0.48	0.58	0.80	0.90	1.04	1.12	1.26
##	[37,]	0.00	0.02	0.06	0.08	0.14	0.22	0.30	0.34	0.40	0.48	0.64	0.72	0.84
##	[38,]	0.00	0.00	0.00	0.02	0.06	0.18	0.22	0.32	0.40	0.46	0.52	0.62	0.78
##	[39,]	0.00	0.00	0.02	0.06	0.16	0.26	0.32	0.40	0.54	0.62	0.78	0.82	0.90
##	[40,]	0.02	0.02	0.02	0.04	0.06	0.14	0.22	0.24	0.40	0.56	0.64	0.74	0.84
##	[41,]	0.00	0.00	0.02	0.04	0.12	0.16	0.28	0.34	0.40	0.48	0.62	0.76	0.82
##	[42,]	0.02	0.06	0.08	0.14	0.28	0.32	0.38	0.42	0.52	0.66	0.80	0.84	0.90
##	[43,]	0.00	0.02	0.10	0.18	0.22	0.36	0.42	0.50	0.68	0.74	0.90	1.00	1.18
##	[44,]	0.00	0.00	0.08	0.12	0.18	0.22	0.36	0.44	0.60	0.74	0.80	0.86	1.00
##	[45,]	0.00	0.00	0.04	0.06	0.10	0.16	0.18	0.30	0.42	0.56	0.64	0.72	0.92
##	[46,]	0.02	0.04	0.10	0.12	0.22	0.26	0.34	0.46	0.58	0.70	0.80	0.90	1.02
##	[47,]	0.04	0.06	0.08	0.12	0.18	0.20	0.24	0.32	0.50	0.58	0.80	0.88	0.92
##	[48,]	0.04	0.04	0.06	0.10	0.12	0.24	0.38	0.50	0.64	0.68	0.78	0.88	1.06
##	[49,]	0.00	0.00	0.06	0.10	0.12	0.18	0.24	0.32	0.40	0.40	0.44	0.46	0.48
##	[50,]	0.02	0.02	0.02	0.06	0.16	0.22	0.32	0.44	0.48	0.54	0.60	0.70	0.72
##	[51,]	0.00	0.00	0.04	0.10	0.18	0.20	0.28	0.36	0.46	0.54	0.56	0.60	0.68
##	[52,]	0.00	0.00	0.02	0.06	0.12	0.12	0.16	0.22	0.30	0.34	0.42	0.42	0.44
##	[53,]	0.00	0.00	0.04	0.06	0.06	0.08	0.12	0.22	0.30	0.30	0.30	0.36	0.36
##	[54,]	0.02	0.02	0.04	0.08	0.10	0.14	0.16	0.22	0.32	0.32	0.38	0.40	0.42
##	[55,]	0.04	0.04	0.06	0.10	0.18	0.18	0.26	0.28	0.34	0.42	0.46	0.48	0.50
##	[56,]	0.02	0.06	0.12	0.16	0.22	0.26	0.36	0.38	0.54	0.64	0.80	0.82	0.90
##	[57,]	0.02	0.04	0.04	0.04	0.16	0.22	0.32	0.46	0.66	0.88	1.08	1.20	1.40
##	[58,]	0.00	0.02	0.06	0.10	0.20	0.24	0.30	0.38	0.48	0.60	0.74	0.88	1.02
##	[59,]	0.00	0.00	0.00	0.08	0.20	0.24	0.34	0.48	0.58	0.76	0.92	1.08	1.20
##	[60,]	0.00	0.00	0.02	0.08	0.18	0.32	0.40	0.46	0.58	0.80	1.04	1.16	1.28
##	[61,]	0.00	0.00	0.00	0.08	0.20	0.30	0.46	0.54	0.62	0.72	0.82	0.98	1.12
##	[62,]	0.00	0.00	0.06	0.08	0.10	0.18	0.26	0.30	0.38	0.52	0.58	0.74	0.86
##	[63,]	0.04	0.04	0.08	0.12	0.20	0.24	0.34	0.40	0.52	0.64	0.78	0.86	0.98
##	[64,]	0.04	0.06	0.12	0.16	0.18	0.20	0.26	0.30	0.42	0.52	0.70	0.80	0.90
##	[65,]	0.00	0.02	0.02	0.02	0.10	0.22	0.26	0.28	0.30	0.34	0.38	0.40	0.48
##	[66,]	0.00	0.00	0.04	0.06	0.08	0.10	0.22	0.32	0.46	0.54	0.68	0.96	1.08
##	[67,]	0.00	0.00	0.10	0.14	0.14	0.22	0.30	0.44	0.52	0.68	0.80	0.88	0.94
##	[68,]	0.02	0.08	0.10	0.10	0.10	0.10	0.10	0.18	0.18	0.20	0.26	0.30	0.36
##	[69,]	0.00	0.02	0.10	0.14	0.22	0.32	0.40	0.48	0.60	0.76	0.92	1.02	1.10
##	[70,]	0.04	0.04	0.08	0.14	0.22	0.26	0.34	0.42	0.54	0.70	0.82	1.02	1.10
##	[71,]	0.00	0.00	0.02	0.16	0.18	0.22	0.30	0.40	0.52	0.62	0.68	0.86	0.96
##	[72,]	0.00	0.00	0.02	0.12	0.22	0.30	0.38	0.46	0.56	0.66	0.68	0.86	0.94

```

## [73,] 0.00 0.00 0.00 0.00 0.04 0.04 0.12 0.14 0.28 0.32 0.40 0.48 0.60
## [74,] 0.00 0.00 0.06 0.08 0.18 0.26 0.36 0.46 0.58 0.78 0.90 1.00 1.16
## [75,] 0.00 0.02 0.02 0.08 0.22 0.26 0.30 0.38 0.60 0.80 1.02 1.14 1.24
## [76,] 0.00 0.00 0.00 0.00 0.04 0.08 0.08 0.14 0.26 0.26 0.32 0.36 0.44
## [77,] 0.02 0.02 0.02 0.06 0.16 0.18 0.28 0.36 0.50 0.54 0.62 0.78 0.84
## [78,] 0.02 0.04 0.10 0.14 0.18 0.24 0.34 0.40 0.58 0.68 0.90 0.90 1.06
## [79,] 0.00 0.00 0.00 0.02 0.08 0.08 0.10 0.14 0.20 0.32 0.38 0.46 0.58
## [80,] 0.02 0.04 0.08 0.10 0.16 0.26 0.32 0.44 0.58 0.68 0.84 0.88 1.08
## [81,] 0.00 0.00 0.02 0.04 0.08 0.08 0.12 0.24 0.34 0.40 0.54 0.66 0.74
## [82,] 0.00 0.00 0.00 0.00 0.04 0.16 0.26 0.32 0.44 0.54 0.72 0.88 0.94
## [83,] 0.00 0.02 0.06 0.06 0.08 0.14 0.18 0.20 0.24 0.26 0.30 0.32 0.42
## [84,] 0.00 0.00 0.00 0.08 0.12 0.16 0.26 0.36 0.44 0.62 0.78 0.90 1.00
## [85,] 0.00 0.00 0.00 0.04 0.16 0.18 0.26 0.36 0.44 0.60 0.76 0.88 1.02
## [86,] 0.02 0.02 0.06 0.14 0.20 0.26 0.40 0.44 0.58 0.66 0.70 0.82 0.94
## [87,] 0.00 0.00 0.02 0.06 0.10 0.12 0.16 0.26 0.44 0.54 0.58 0.70 0.84
## [88,] 0.00 0.02 0.12 0.12 0.22 0.26 0.30 0.40 0.56 0.70 0.92 1.02 1.08
## [89,] 0.00 0.00 0.00 0.04 0.06 0.10 0.22 0.28 0.36 0.42 0.46 0.52 0.64
## [90,] 0.02 0.04 0.04 0.04 0.08 0.20 0.28 0.38 0.42 0.50 0.52 0.66 0.88
## [91,] 0.02 0.04 0.10 0.12 0.24 0.28 0.32 0.42 0.56 0.66 0.80 0.90 1.04
## [92,] 0.00 0.00 0.02 0.06 0.16 0.34 0.54 0.70 0.80 1.00 1.08 1.20 1.36
## [93,] 0.00 0.00 0.04 0.10 0.20 0.32 0.54 0.58 0.70 0.80 0.86 1.00 1.12
## [94,] 0.00 0.02 0.04 0.08 0.16 0.18 0.28 0.32 0.42 0.56 0.80 0.94 1.02
## [95,] 0.00 0.00 0.06 0.12 0.20 0.22 0.30 0.38 0.48 0.64 0.80 0.94 1.06
## [96,] 0.02 0.02 0.06 0.16 0.28 0.42 0.44 0.52 0.60 0.74 0.88 0.94 1.02
## [97,] 0.00 0.00 0.04 0.14 0.24 0.32 0.38 0.46 0.56 0.60 0.68 0.86 0.94
## [98,] 0.00 0.04 0.10 0.10 0.18 0.34 0.46 0.56 0.66 0.70 0.82 0.94 1.06
## [99,] 0.00 0.00 0.08 0.10 0.12 0.12 0.16 0.30 0.44 0.50 0.60 0.72 0.94
## [100,] 0.02 0.04 0.06 0.08 0.12 0.20 0.26 0.38 0.58 0.66 0.72 0.84 1.02
## [101,] 0.02 0.02 0.06 0.18 0.18 0.22 0.26 0.36 0.54 0.64 0.80 0.92 1.08
## [102,] 0.04 0.04 0.08 0.16 0.20 0.22 0.26 0.30 0.40 0.58 0.74 0.88 0.96
## [103,] 0.00 0.00 0.06 0.06 0.08 0.16 0.20 0.20 0.20 0.28 0.36 0.36 0.40
## [104,] 0.00 0.00 0.02 0.02 0.08 0.20 0.20 0.24 0.26 0.30 0.36 0.42 0.56
## [105,] 0.00 0.04 0.06 0.06 0.08 0.10 0.14 0.22 0.24 0.26 0.30 0.34 0.42
## [106,] 0.02 0.08 0.08 0.08 0.12 0.12 0.16 0.20 0.24 0.24 0.24 0.30 0.32
## [107,] 0.00 0.00 0.00 0.00 0.08 0.26 0.32 0.34 0.34 0.38 0.38 0.44 0.48
## [108,] 0.04 0.08 0.08 0.08 0.10 0.16 0.20 0.24 0.26 0.26 0.32 0.38 0.42
##      [,14] [,15] [,16] [,17] [,18] [,19] [,20] [,21] [,22] [,23] [,24]
## [1,] 1.421085e-16 0.08 0.08 0.12 0.14 0.18 0.20 0.24 0.30 0.34 0.40
## [2,] 1.480000e+00 1.68 1.92 2.02 2.20 2.40 2.76 2.94 3.38 3.58 3.84
## [3,] 1.260000e+00 1.34 1.48 1.60 1.88 2.02 2.12 2.32 2.56 2.82 3.10
## [4,] 1.280000e+00 1.50 1.70 1.84 2.08 2.14 2.28 2.44 2.58 2.78 3.04
## [5,] 1.420000e+00 1.54 1.70 1.92 2.10 2.22 2.40 2.52 2.70 2.96 3.10
## [6,] 1.500000e+00 1.66 1.88 2.06 2.22 2.42 2.60 2.90 3.18 3.38 3.70
## [7,] 9.400000e-01 1.00 1.18 1.30 1.42 1.54 1.74 1.90 2.04 2.20 2.44
## [8,] 1.180000e+00 1.42 1.54 1.74 1.84 2.04 2.20 2.38 2.42 2.64 2.84
## [9,] 1.040000e+00 1.10 1.38 1.56 1.76 1.96 2.26 2.40 2.76 2.98 3.34
## [10,] 1.080000e+00 1.26 1.44 1.68 1.92 2.14 2.34 2.44 2.68 3.00 3.18
## [11,] 6.200000e-01 0.66 0.80 0.96 1.20 1.46 1.64 1.78 1.88 2.14 2.26
## [12,] 1.260000e+00 1.38 1.52 1.64 1.80 1.92 2.16 2.34 2.40 2.62 2.76
## [13,] 1.280000e+00 1.38 1.58 1.64 1.82 2.02 2.20 2.56 2.82 3.02 3.18
## [14,] 7.800000e-01 1.00 1.16 1.52 1.66 1.74 1.84 1.98 2.20 2.34 2.48
## [15,] 1.400000e+00 1.50 1.56 1.76 1.90 2.02 2.16 2.34 2.56 3.00 3.20
## [16,] 1.020000e+00 1.24 1.32 1.62 1.74 1.96 2.20 2.48 2.82 3.04 3.20
## [17,] 1.280000e+00 1.38 1.50 1.76 2.00 2.14 2.32 2.54 2.74 2.96 3.26

```

##	[18,]	1.260000e+00	1.42	1.54	1.74	1.90	2.10	2.24	2.46	2.76	2.96	3.22
##	[19,]	8.200000e-01	0.98	1.14	1.30	1.40	1.44	1.60	1.80	1.94	2.12	2.24
##	[20,]	1.460000e+00	1.58	1.74	1.94	2.02	2.12	2.32	2.40	2.66	2.98	3.20
##	[21,]	1.080000e+00	1.18	1.26	1.46	1.62	1.80	2.04	2.24	2.40	2.70	2.86
##	[22,]	4.800000e-01	0.64	0.76	0.84	1.04	1.20	1.44	1.64	1.86	2.02	2.30
##	[23,]	1.520000e+00	1.70	1.92	2.10	2.30	2.48	2.56	2.72	2.94	3.16	3.34
##	[24,]	1.280000e+00	1.48	1.72	1.94	2.28	2.44	2.70	2.92	3.26	3.60	3.82
##	[25,]	1.040000e+00	1.14	1.34	1.50	1.68	1.84	2.00	2.18	2.38	2.50	2.72
##	[26,]	1.120000e+00	1.42	1.62	1.90	2.12	2.32	2.58	2.74	3.08	3.36	3.62
##	[27,]	1.060000e+00	1.10	1.22	1.40	1.56	1.68	1.92	1.98	2.08	2.30	2.48
##	[28,]	1.100000e+00	1.36	1.44	1.62	1.80	1.96	2.10	2.36	2.56	2.76	2.94
##	[29,]	8.400000e-01	0.92	1.12	1.40	1.62	1.82	2.02	2.18	2.40	2.74	3.00
##	[30,]	7.000000e-01	0.84	1.00	1.24	1.30	1.44	1.58	1.74	1.96	2.18	2.42
##	[31,]	1.460000e+00	1.70	1.94	2.04	2.20	2.32	2.56	2.62	2.74	2.94	3.20
##	[32,]	1.240000e+00	1.40	1.54	1.70	1.92	2.06	2.20	2.30	2.44	2.66	2.90
##	[33,]	1.060000e+00	1.32	1.50	1.70	1.86	2.02	2.26	2.46	2.64	2.90	3.08
##	[34,]	1.320000e+00	1.50	1.60	1.78	1.96	2.28	2.60	2.86	3.12	3.50	3.72
##	[35,]	1.140000e+00	1.22	1.34	1.60	1.72	1.90	2.12	2.32	2.60	2.86	3.06
##	[36,]	1.400000e+00	1.56	1.70	1.92	2.04	2.28	2.36	2.70	2.86	3.16	3.50
##	[37,]	9.200000e-01	1.12	1.22	1.40	1.58	1.86	2.00	2.28	2.50	2.88	3.18
##	[38,]	8.400000e-01	1.02	1.14	1.38	1.56	1.68	1.76	1.86	1.98	2.12	2.38
##	[39,]	1.020000e+00	1.10	1.32	1.50	1.66	1.80	1.88	2.04	2.24	2.56	2.76
##	[40,]	1.100000e+00	1.36	1.46	1.74	1.96	2.12	2.32	2.52	2.78	3.04	3.20
##	[41,]	1.020000e+00	1.16	1.22	1.42	1.48	1.68	1.90	2.12	2.34	2.72	3.04
##	[42,]	1.120000e+00	1.24	1.44	1.66	1.92	2.16	2.42	2.72	3.02	3.22	3.48
##	[43,]	1.380000e+00	1.56	1.72	1.98	2.10	2.30	2.56	2.80	2.96	3.30	3.62
##	[44,]	1.140000e+00	1.28	1.44	1.66	1.86	2.12	2.34	2.48	2.70	3.08	3.36
##	[45,]	1.000000e+00	1.18	1.34	1.56	1.82	2.10	2.32	2.52	2.72	3.02	3.34
##	[46,]	1.220000e+00	1.40	1.56	1.82	1.92	2.12	2.32	2.54	2.76	3.08	3.38
##	[47,]	1.120000e+00	1.34	1.44	1.60	1.78	2.02	2.26	2.48	2.92	3.12	3.38
##	[48,]	1.220000e+00	1.40	1.60	1.74	1.96	2.30	2.54	2.76	3.04	3.32	3.58
##	[49,]	5.600000e-01	0.64	0.68	0.76	0.90	1.12	1.38	1.56	1.70	1.86	2.10
##	[50,]	8.600000e-01	0.88	1.06	1.26	1.54	1.80	1.98	2.14	2.30	2.58	2.92
##	[51,]	7.600000e-01	0.86	0.98	1.24	1.50	1.68	1.90	2.10	2.18	2.40	2.54
##	[52,]	5.000000e-01	0.58	0.78	1.06	1.26	1.42	1.62	1.68	1.84	2.10	2.32
##	[53,]	5.000000e-01	0.58	0.80	1.06	1.16	1.34	1.42	1.62	1.74	1.92	2.12
##	[54,]	4.600000e-01	0.60	0.76	1.00	1.08	1.14	1.26	1.36	1.44	1.64	1.82
##	[55,]	5.600000e-01	0.72	0.90	1.12	1.16	1.24	1.34	1.48	1.54	1.74	1.86
##	[56,]	1.020000e+00	1.20	1.38	1.56	1.66	1.90	2.04	2.22	2.64	2.82	3.02
##	[57,]	1.560000e+00	1.68	1.90	2.16	2.42	2.62	2.78	3.06	3.38	3.70	3.88
##	[58,]	1.200000e+00	1.24	1.46	1.66	1.82	2.02	2.20	2.32	2.46	2.64	2.80
##	[59,]	1.320000e+00	1.50	1.64	1.78	1.94	2.12	2.38	2.52	2.62	2.82	2.90
##	[60,]	1.480000e+00	1.64	1.88	2.08	2.22	2.54	2.88	3.14	3.34	3.70	3.94
##	[61,]	1.280000e+00	1.56	1.68	1.80	2.00	2.12	2.34	2.54	2.76	2.92	3.14
##	[62,]	1.060000e+00	1.14	1.34	1.52	1.62	1.80	1.98	2.14	2.28	2.44	2.66
##	[63,]	1.200000e+00	1.40	1.56	1.72	1.88	2.04	2.14	2.40	2.70	2.86	3.08
##	[64,]	1.040000e+00	1.20	1.42	1.78	1.94	2.10	2.32	2.46	2.90	3.12	3.46
##	[65,]	5.600000e-01	0.64	0.74	1.10	1.20	1.40	1.56	1.60	1.68	1.92	2.10
##	[66,]	1.280000e+00	1.40	1.52	1.72	2.00	2.14	2.24	2.36	2.56	2.76	3.04
##	[67,]	1.120000e+00	1.18	1.30	1.54	1.68	1.78	1.94	2.16	2.32	2.64	2.84
##	[68,]	4.000000e-01	0.56	0.66	0.82	0.90	1.04	1.14	1.36	1.44	1.64	1.82
##	[69,]	1.320000e+00	1.52	1.70	1.84	2.00	2.20	2.40	2.56	2.80	3.08	3.20
##	[70,]	1.220000e+00	1.34	1.54	1.78	2.00	2.34	2.60	2.88	3.10	3.30	3.52
##	[71,]	1.100000e+00	1.24	1.32	1.46	1.60	1.86	2.08	2.28	2.42	2.72	2.94

```

## [72,] 1.140000e+00 1.26 1.56 1.80 1.98 2.08 2.30 2.46 2.76 2.92 3.18
## [73,] 7.400000e-01 0.88 1.00 1.20 1.30 1.40 1.50 1.72 2.00 2.24 2.48
## [74,] 1.340000e+00 1.44 1.58 1.80 2.02 2.18 2.38 2.64 2.86 3.02 3.20
## [75,] 1.380000e+00 1.60 1.80 1.96 2.18 2.38 2.60 2.82 3.02 3.40 3.72
## [76,] 5.400000e-01 0.66 0.82 1.00 1.12 1.26 1.42 1.62 1.84 1.98 2.12
## [77,] 1.000000e+00 1.14 1.28 1.38 1.50 1.72 1.90 2.06 2.22 2.38 2.54
## [78,] 1.240000e+00 1.38 1.60 1.76 1.98 2.14 2.34 2.62 2.82 3.02 3.36
## [79,] 8.200000e-01 0.90 1.04 1.20 1.26 1.32 1.34 1.62 1.86 2.04 2.30
## [80,] 1.200000e+00 1.48 1.56 1.82 1.94 2.08 2.32 2.56 2.74 3.06 3.32
## [81,] 8.600000e-01 0.98 1.18 1.36 1.60 1.82 1.90 1.98 2.16 2.28 2.56
## [82,] 1.120000e+00 1.26 1.40 1.60 1.80 1.84 1.94 2.04 2.28 2.48 2.80
## [83,] 5.400000e-01 0.58 0.80 1.14 1.32 1.50 1.58 1.72 1.86 2.02 2.22
## [84,] 1.080000e+00 1.16 1.28 1.38 1.66 1.74 1.74 1.92 2.06 2.28 2.46
## [85,] 1.140000e+00 1.26 1.34 1.50 1.72 1.96 2.00 2.12 2.36 2.44 2.56
## [86,] 1.160000e+00 1.28 1.46 1.56 1.76 1.92 2.08 2.26 2.44 2.56 2.84
## [87,] 1.020000e+00 1.16 1.34 1.62 1.86 2.20 2.32 2.62 2.86 3.20 3.36
## [88,] 1.240000e+00 1.44 1.58 1.80 2.14 2.36 2.62 2.92 3.24 3.68 3.94
## [89,] 7.600000e-01 0.78 0.92 1.06 1.20 1.26 1.40 1.58 1.74 1.92 2.28
## [90,] 9.600000e-01 1.10 1.20 1.38 1.52 1.86 1.98 2.22 2.42 2.66 2.84
## [91,] 1.200000e+00 1.30 1.52 1.76 1.98 2.20 2.66 2.88 3.04 3.28 3.44
## [92,] 1.540000e+00 1.72 1.92 2.08 2.24 2.40 2.50 2.66 2.80 3.10 3.32
## [93,] 1.240000e+00 1.44 1.60 1.78 1.92 2.12 2.34 2.58 2.78 3.14 3.34
## [94,] 1.220000e+00 1.58 1.72 1.86 2.10 2.42 2.52 2.66 3.02 3.28 3.50
## [95,] 1.200000e+00 1.38 1.52 1.72 1.90 2.06 2.20 2.34 2.60 2.80 3.04
## [96,] 1.120000e+00 1.22 1.34 1.62 1.90 2.20 2.34 2.62 2.86 3.10 3.26
## [97,] 1.140000e+00 1.26 1.32 1.54 1.84 2.06 2.46 2.70 3.08 3.24 3.56
## [98,] 1.140000e+00 1.26 1.44 1.66 1.82 2.00 2.12 2.28 2.52 2.74 2.94
## [99,] 1.140000e+00 1.26 1.36 1.54 1.80 1.96 2.30 2.54 2.66 2.98 3.38
## [100,] 1.180000e+00 1.38 1.54 1.68 1.82 1.98 2.22 2.42 2.68 3.00 3.26
## [101,] 1.220000e+00 1.38 1.56 1.88 2.16 2.40 2.68 2.98 3.34 3.68 4.04
## [102,] 1.060000e+00 1.32 1.44 1.82 2.00 2.32 2.56 2.84 3.12 3.52 3.78
## [103,] 5.400000e-01 0.58 0.68 1.02 1.26 1.46 1.62 1.82 1.92 2.16 2.36
## [104,] 6.600000e-01 0.72 0.90 1.12 1.42 1.60 1.78 1.96 2.16 2.34 2.50
## [105,] 4.600000e-01 0.54 0.66 0.80 1.00 1.18 1.38 1.52 1.62 1.86 2.06
## [106,] 3.400000e-01 0.48 0.66 0.92 1.02 1.22 1.40 1.54 1.60 1.80 2.00
## [107,] 6.600000e-01 0.88 1.16 1.32 1.52 1.64 1.80 1.98 2.04 2.14 2.34
## [108,] 5.200000e-01 0.64 0.80 1.06 1.10 1.20 1.38 1.56 1.66 1.84 2.06
##      [,25] [,26] [,27] [,28] [,29] [,30] [,31] [,32] [,33] [,34] [,35] [,36]
## [1,] 0.56 0.76 0.94 1.26 1.48 1.76 1.92 2.24 2.48 2.64 2.94 3.36
## [2,] 4.04 4.18 4.40 4.58 4.86 4.92 5.26 5.64 6.02 6.38 6.64 6.86
## [3,] 3.46 3.58 3.82 4.14 4.48 4.80 5.10 5.40 5.70 6.16 6.50 6.90
## [4,] 3.12 3.28 3.56 3.68 3.96 4.26 4.50 4.72 5.08 5.40 5.90 6.16
## [5,] 3.34 3.50 3.70 3.86 4.10 4.36 4.60 4.76 5.08 5.42 5.72 6.14
## [6,] 4.02 4.28 4.58 4.90 5.38 5.68 6.06 6.28 6.48 6.68 7.14 7.34
## [7,] 2.70 2.84 3.04 3.36 3.70 3.86 4.12 4.38 4.64 4.92 5.26 5.56
## [8,] 3.06 3.20 3.42 3.72 4.10 4.26 4.46 4.78 5.16 5.54 5.98 6.38
## [9,] 3.56 3.74 4.16 4.36 4.54 4.82 5.22 5.44 5.68 5.94 6.28 6.60
## [10,] 3.40 3.60 3.86 4.02 4.28 4.48 4.76 5.02 5.30 5.76 6.04 6.34
## [11,] 2.52 2.78 3.04 3.28 3.46 3.64 3.84 3.94 4.22 4.54 4.76 5.02
## [12,] 2.96 3.14 3.40 3.62 3.86 4.04 4.34 4.56 4.84 5.06 5.38 5.64
## [13,] 3.42 3.76 4.10 4.36 4.66 4.94 5.18 5.26 5.54 5.92 6.26 6.50
## [14,] 2.62 2.82 3.16 3.40 3.74 3.98 4.34 4.54 4.78 4.96 5.34 5.44
## [15,] 3.50 3.88 4.14 4.36 4.62 4.82 5.04 5.32 5.72 5.96 6.36 6.60
## [16,] 3.42 3.64 3.78 3.98 4.34 4.62 4.86 5.12 5.48 5.72 5.88 6.26

```

##	[17,]	3.42	3.64	3.98	4.16	4.34	4.56	4.72	4.90	5.22	5.48	5.86	6.18
##	[18,]	3.30	3.52	3.80	4.10	4.28	4.44	4.72	4.90	5.28	5.66	5.98	6.24
##	[19,]	2.52	2.64	2.72	3.00	3.28	3.48	3.72	3.94	4.24	4.50	4.62	4.80
##	[20,]	3.40	3.60	3.94	4.12	4.38	4.60	4.82	5.04	5.46	5.78	6.06	6.42
##	[21,]	3.10	3.30	3.72	3.88	4.16	4.50	4.76	5.10	5.48	5.76	6.00	6.46
##	[22,]	2.46	2.58	2.70	2.96	3.20	3.48	3.68	3.92	4.26	4.34	4.70	4.96
##	[23,]	3.58	3.88	4.10	4.34	4.56	4.80	5.04	5.36	5.70	6.10	6.44	6.82
##	[24,]	4.14	4.38	4.64	4.84	5.08	5.36	5.50	5.70	5.94	6.20	6.56	6.98
##	[25,]	2.98	3.32	3.58	3.68	4.06	4.36	4.58	4.86	5.44	5.78	6.06	6.38
##	[26,]	3.80	4.04	4.28	4.42	4.60	4.86	5.10	5.34	5.60	5.94	6.40	6.74
##	[27,]	2.72	3.00	3.28	3.48	3.68	3.92	4.18	4.40	4.64	4.88	5.12	5.48
##	[28,]	3.08	3.32	3.60	3.82	4.18	4.34	4.58	4.88	5.36	5.80	5.94	6.32
##	[29,]	3.26	3.54	3.86	4.10	4.40	4.80	4.88	5.12	5.28	5.56	5.88	6.14
##	[30,]	2.56	2.76	2.96	3.14	3.34	3.54	3.72	3.94	4.26	4.50	4.84	5.26
##	[31,]	3.48	3.58	3.76	3.96	4.34	4.60	4.72	5.14	5.38	5.68	6.20	6.56
##	[32,]	3.26	3.38	3.62	3.80	4.08	4.24	4.38	4.66	4.96	5.32	5.74	6.02
##	[33,]	3.42	3.68	3.78	3.96	4.22	4.38	4.68	4.92	5.10	5.38	5.66	5.92
##	[34,]	4.04	4.20	4.46	4.78	4.94	5.12	5.48	5.72	6.10	6.42	6.80	7.14
##	[35,]	3.38	3.62	3.98	4.14	4.48	4.62	4.86	5.06	5.30	5.58	5.92	6.16
##	[36,]	3.72	4.08	4.32	4.52	4.98	5.26	5.60	5.90	6.18	6.32	6.70	6.92
##	[37,]	3.36	3.50	3.66	3.96	4.20	4.38	4.72	4.92	5.18	5.48	5.84	6.18
##	[38,]	2.56	2.80	2.92	3.12	3.32	3.60	3.88	4.06	4.36	4.68	5.02	5.48
##	[39,]	2.98	3.26	3.38	3.58	3.90	4.04	4.34	4.68	4.94	5.18	5.42	5.52
##	[40,]	3.44	3.70	4.06	4.28	4.48	4.82	5.06	5.42	5.84	6.18	6.48	6.70
##	[41,]	3.32	3.54	3.82	4.06	4.56	4.70	4.90	5.24	5.74	6.06	6.22	6.52
##	[42,]	3.74	4.08	4.40	4.66	4.94	5.12	5.44	5.92	6.42	6.74	6.98	7.24
##	[43,]	3.98	4.18	4.44	4.54	4.82	5.08	5.34	5.48	5.74	6.06	6.48	6.84
##	[44,]	3.64	4.00	4.24	4.48	4.82	5.12	5.42	5.56	5.98	6.28	6.60	6.90
##	[45,]	3.56	3.96	4.28	4.52	4.86	5.14	5.44	5.74	6.14	6.42	6.76	7.06
##	[46,]	3.66	3.88	4.10	4.26	4.44	4.72	4.98	5.24	5.56	5.94	6.20	6.60
##	[47,]	3.56	3.72	3.86	4.02	4.28	4.46	4.74	5.18	5.42	5.70	5.94	6.26
##	[48,]	3.84	3.98	4.24	4.42	4.72	4.90	5.22	5.48	5.94	6.22	6.70	7.02
##	[49,]	2.38	2.60	2.88	3.12	3.22	3.46	3.62	3.82	4.06	4.26	4.52	4.88
##	[50,]	3.10	3.46	3.74	4.10	4.34	4.68	4.82	5.08	5.26	5.52	5.76	6.12
##	[51,]	2.68	3.02	3.40	3.66	3.96	4.14	4.20	4.50	4.68	4.98	5.30	5.56
##	[52,]	2.66	2.90	3.14	3.40	3.62	4.02	4.28	4.62	4.94	5.26	5.50	5.86
##	[53,]	2.40	2.70	3.04	3.18	3.52	3.72	4.00	4.32	4.52	4.88	5.28	5.64
##	[54,]	2.00	2.26	2.54	2.86	3.06	3.26	3.62	3.96	4.22	4.48	4.78	5.04
##	[55,]	2.04	2.12	2.42	2.74	3.12	3.40	3.58	3.82	4.20	4.50	4.74	5.10
##	[56,]	3.18	3.42	3.56	3.68	3.82	4.02	4.26	4.58	4.90	5.08	5.42	5.80
##	[57,]	4.12	4.38	4.78	5.02	5.32	5.70	6.06	6.42	6.78	7.10	7.40	7.70
##	[58,]	3.02	3.22	3.36	3.52	3.70	4.02	4.48	4.74	5.06	5.34	5.68	5.92
##	[59,]	3.16	3.48	3.74	4.02	4.36	4.58	4.74	4.88	5.26	5.60	5.94	6.34
##	[60,]	4.34	4.64	4.84	5.20	5.46	5.92	6.26	6.48	6.86	7.06	7.38	7.72
##	[61,]	3.38	3.70	4.04	4.34	4.66	4.92	5.18	5.44	5.82	6.04	6.34	6.48
##	[62,]	2.86	2.92	3.08	3.26	3.44	3.74	4.12	4.40	4.72	5.00	5.28	5.52
##	[63,]	3.36	3.52	3.84	3.98	4.16	4.32	4.58	4.86	5.04	5.30	5.70	6.04
##	[64,]	3.66	3.90	4.14	4.28	4.50	4.74	4.98	5.26	5.78	6.06	6.32	6.70
##	[65,]	2.40	2.70	2.90	3.14	3.50	3.78	3.96	4.28	4.46	4.70	4.86	5.18
##	[66,]	3.22	3.40	3.82	4.16	4.46	4.68	4.82	5.14	5.50	5.86	6.20	6.38
##	[67,]	3.16	3.50	3.70	3.90	4.08	4.34	4.62	4.92	5.10	5.30	5.54	5.74
##	[68,]	2.10	2.48	2.72	3.20	3.44	3.90	4.34	4.70	4.98	5.20	5.48	5.86
##	[69,]	3.48	3.74	4.02	4.16	4.38	4.60	4.78	5.08	5.30	5.52	5.68	6.04
##	[70,]	3.72	3.90	4.04	4.36	4.60	4.72	5.08	5.32	5.64	6.06	6.30	6.54

##	[71,]	3.24	3.48	3.78	4.04	4.22	4.42	4.58	4.74	5.02	5.14	5.30	5.52
##	[72,]	3.30	3.56	3.76	3.96	4.20	4.40	4.70	4.96	5.24	5.64	5.90	6.24
##	[73,]	2.66	2.90	3.02	3.20	3.46	3.80	4.08	4.32	4.40	4.58	4.68	4.94
##	[74,]	3.48	3.72	3.98	4.16	4.40	4.64	4.84	4.94	5.42	5.76	6.14	6.52
##	[75,]	4.04	4.32	4.56	4.86	5.00	5.36	5.58	5.92	6.28	6.54	6.84	7.10
##	[76,]	2.36	2.56	2.60	2.80	3.06	3.36	3.64	3.90	4.26	4.58	4.88	5.08
##	[77,]	2.74	3.14	3.38	3.56	3.80	3.96	4.18	4.52	4.88	5.14	5.48	5.88
##	[78,]	3.54	3.80	3.96	4.16	4.36	4.62	4.78	4.98	5.28	5.58	5.94	6.18
##	[79,]	2.50	2.84	2.90	3.10	3.44	3.66	4.12	4.22	4.42	4.58	4.80	5.10
##	[80,]	3.70	3.92	4.10	4.24	4.50	4.76	5.02	5.22	5.46	5.76	6.08	6.40
##	[81,]	2.72	3.14	3.46	3.76	4.02	4.20	4.62	5.04	5.28	5.64	5.82	6.20
##	[82,]	3.16	3.50	3.66	4.00	4.14	4.30	4.68	4.94	5.24	5.46	5.80	6.14
##	[83,]	2.38	2.72	2.96	3.24	3.54	3.74	4.02	4.22	4.52	4.66	5.04	5.24
##	[84,]	2.52	2.70	2.98	3.22	3.38	3.58	3.76	3.98	4.38	4.78	4.96	5.22
##	[85,]	2.86	3.26	3.48	3.60	3.94	4.10	4.24	4.48	4.66	5.06	5.54	5.84
##	[86,]	3.06	3.40	3.68	3.86	4.08	4.28	4.54	4.80	5.18	5.46	5.76	6.22
##	[87,]	3.60	3.88	4.20	4.44	4.70	4.98	5.42	5.74	5.98	6.42	6.82	7.08
##	[88,]	4.16	4.40	4.62	4.80	5.00	5.16	5.46	5.78	6.18	6.58	6.82	7.14
##	[89,]	2.44	2.68	2.80	3.06	3.34	3.56	3.82	4.02	4.20	4.36	4.64	4.82
##	[90,]	3.18	3.38	3.50	3.70	4.08	4.36	4.60	4.94	5.26	5.42	5.60	5.90
##	[91,]	3.70	3.92	4.10	4.26	4.44	4.66	5.00	5.24	5.48	5.94	6.16	6.38
##	[92,]	3.52	3.74	3.96	4.14	4.42	4.72	5.10	5.38	5.62	5.88	6.20	6.52
##	[93,]	3.48	3.76	3.88	4.14	4.56	4.80	4.96	5.14	5.40	5.60	5.78	6.04
##	[94,]	3.78	4.10	4.34	4.70	4.94	5.16	5.48	5.86	6.20	6.58	6.90	7.14
##	[95,]	3.26	3.58	3.98	4.16	4.36	4.58	4.76	5.00	5.34	5.48	5.84	6.16
##	[96,]	3.48	3.78	4.06	4.36	4.56	4.76	4.96	5.24	5.68	6.06	6.30	6.50
##	[97,]	3.88	4.22	4.52	4.76	5.16	5.54	5.86	6.16	6.56	6.88	7.20	7.60
##	[98,]	3.26	3.50	3.72	4.08	4.36	4.50	4.76	4.96	5.28	5.58	5.80	5.98
##	[99,]	3.54	4.04	4.40	4.72	5.00	5.22	5.56	5.96	6.38	6.72	7.04	7.40
##	[100,]	3.72	3.88	4.04	4.20	4.42	4.78	5.04	5.28	5.62	5.94	6.20	6.56
##	[101,]	4.28	4.54	4.86	5.16	5.40	5.68	5.92	6.30	6.76	7.12	7.52	7.86
##	[102,]	4.04	4.26	4.62	4.80	5.06	5.34	5.58	6.08	6.52	6.86	7.26	7.58
##	[103,]	2.52	2.74	3.10	3.34	3.64	3.76	4.00	4.18	4.34	4.56	4.84	5.08
##	[104,]	2.76	3.08	3.44	3.78	4.06	4.28	4.50	4.78	5.00	5.24	5.42	5.76
##	[105,]	2.28	2.52	2.88	3.20	3.56	3.88	4.34	4.62	4.96	5.24	5.50	5.68
##	[106,]	2.12	2.46	2.78	3.10	3.36	3.66	4.04	4.24	4.52	4.88	5.18	5.40
##	[107,]	2.50	2.72	3.12	3.36	3.64	3.96	4.16	4.36	4.62	4.94	5.28	5.58
##	[108,]	2.26	2.62	2.94	3.32	3.56	3.92	4.28	4.70	4.90	5.14	5.44	5.78
##	[,37]	[,38]	[,39]	[,40]	[,41]	[,42]	[,43]	[,44]	[,45]	[,46]	[,47]	[,48]	
##	[1,]	3.86	4.36	4.56	4.96	5.48	6.08	6.62	6.90	7.56	7.84	8.36	8.74
##	[2,]	7.22	7.56	7.86	8.16	8.66	9.02	9.46	9.98	10.28	10.66	11.24	11.62
##	[3,]	7.20	7.42	7.78	7.98	8.30	8.62	8.86	9.56	9.88	10.38	10.92	11.24
##	[4,]	6.62	7.08	7.50	7.94	8.44	8.98	9.54	9.94	10.22	10.82	11.30	11.66
##	[5,]	6.42	6.90	7.20	7.70	8.14	8.66	9.02	9.56	9.96	10.54	10.92	11.28
##	[6,]	7.62	7.98	8.22	8.70	8.96	9.24	9.58	9.88	10.14	10.54	10.88	11.40
##	[7,]	5.74	5.90	6.04	6.36	6.64	6.96	7.44	7.80	8.20	8.74	9.08	9.58
##	[8,]	6.82	7.14	7.64	8.16	8.60	9.10	9.50	9.88	10.26	10.68	11.08	11.54
##	[9,]	6.84	7.12	7.44	7.96	8.30	8.60	9.16	9.58	9.94	10.24	10.62	11.14
##	[10,]	6.62	6.98	7.14	7.50	7.90	8.26	8.80	9.26	9.86	10.38	10.92	11.32
##	[11,]	5.34	5.66	6.04	6.26	6.62	6.94	7.20	7.60	8.10	8.76	9.08	9.64
##	[12,]	5.92	6.26	6.44	6.74	7.14	7.44	7.92	8.20	8.60	9.18	9.44	10.14
##	[13,]	6.70	7.02	7.36	7.70	8.24	8.52	8.78	9.16	9.52	9.92	10.40	10.96
##	[14,]	5.78	5.96	6.26	6.64	6.92	7.30	7.56	7.92	8.22	8.52	9.00	9.44
##	[15,]	6.94	7.34	7.58	8.02	8.38	8.82	9.20	9.60	9.84	10.42	10.92	11.54

##	[16,]	6.74	7.02	7.30	7.60	7.96	8.32	8.74	9.04	9.50	9.96	10.34	10.82
##	[17,]	6.62	6.92	7.32	7.70	8.00	8.36	8.74	9.14	9.50	9.90	10.30	10.88
##	[18,]	6.64	7.04	7.26	7.62	8.04	8.40	8.78	9.20	9.74	10.14	10.56	10.80
##	[19,]	5.04	5.30	5.66	5.98	6.30	6.62	7.00	7.44	7.84	8.26	8.88	9.38
##	[20,]	6.96	7.42	7.76	8.04	8.36	8.76	9.06	9.44	9.78	10.24	10.68	11.26
##	[21,]	6.80	7.10	7.50	7.76	8.06	8.38	8.70	9.04	9.60	9.90	10.46	10.98
##	[22,]	5.26	5.62	5.90	6.26	6.54	6.96	7.38	7.76	8.16	8.54	9.14	9.64
##	[23,]	7.24	7.76	8.20	8.64	9.06	9.44	9.80	10.26	10.80	11.20	11.72	12.34
##	[24,]	7.26	7.48	7.88	8.30	8.64	9.02	9.36	9.74	9.96	10.28	10.74	11.24
##	[25,]	6.56	6.88	7.24	7.62	8.04	8.42	8.92	9.14	9.56	9.90	10.36	10.86
##	[26,]	7.02	7.32	7.58	7.92	8.24	8.84	9.22	9.76	9.98	10.48	11.06	11.48
##	[27,]	5.78	5.96	6.34	6.68	6.92	7.20	7.58	8.04	8.48	9.10	9.36	9.86
##	[28,]	6.68	7.14	7.46	7.72	8.10	8.40	8.80	9.18	9.64	10.12	10.56	11.20
##	[29,]	6.36	6.76	7.14	7.46	7.76	8.08	8.38	8.70	9.06	9.56	10.02	10.52
##	[30,]	5.62	5.86	6.14	6.32	6.52	6.86	7.28	7.48	7.82	8.20	8.68	9.36
##	[31,]	7.00	7.38	7.78	8.28	8.72	9.20	9.68	10.14	10.74	11.08	11.48	11.76
##	[32,]	6.34	6.70	7.28	7.62	7.86	8.10	8.60	8.90	9.44	9.78	10.22	10.68
##	[33,]	6.38	6.72	7.10	7.30	7.78	8.24	8.54	8.84	9.54	10.06	10.36	10.92
##	[34,]	7.46	8.00	8.28	8.84	9.24	9.58	9.98	10.28	10.80	11.12	11.48	11.80
##	[35,]	6.48	6.78	7.04	7.36	7.70	8.04	8.42	8.88	9.30	9.74	10.16	10.68
##	[36,]	7.24	7.62	7.84	8.38	8.68	9.06	9.40	9.74	10.08	10.48	10.82	11.24
##	[37,]	6.42	6.72	7.00	7.38	7.68	8.04	8.56	8.92	9.34	9.80	10.32	10.82
##	[38,]	5.90	6.14	6.54	6.86	7.24	7.62	7.88	8.44	8.82	9.20	9.62	10.10
##	[39,]	5.74	5.98	6.08	6.36	6.68	6.82	7.14	7.44	7.90	8.10	8.46	8.90
##	[40,]	7.02	7.44	7.84	7.98	8.24	8.52	9.00	9.40	9.74	10.14	10.68	11.14
##	[41,]	7.00	7.28	7.72	8.10	8.58	9.10	9.42	9.88	10.18	10.46	10.84	11.32
##	[42,]	7.62	8.02	8.36	8.78	9.18	9.52	9.96	10.42	10.82	11.02	11.34	11.78
##	[43,]	7.16	7.40	7.66	8.02	8.36	8.88	9.24	9.88	10.30	10.76	11.08	11.54
##	[44,]	7.28	7.64	8.06	8.52	8.94	9.54	10.08	10.52	10.86	11.58	11.98	12.64
##	[45,]	7.38	7.66	8.10	8.52	8.88	9.40	10.02	10.48	11.10	11.50	11.98	12.58
##	[46,]	6.94	7.34	7.60	8.08	8.52	8.98	9.40	9.90	10.38	10.78	11.40	12.08
##	[47,]	6.58	7.06	7.28	7.58	7.94	8.36	8.90	9.30	9.84	10.38	10.96	11.60
##	[48,]	7.36	7.62	7.98	8.52	9.04	9.40	9.70	10.04	10.48	10.80	11.10	11.52
##	[49,]	5.24	5.50	5.80	6.14	6.52	6.80	7.16	7.54	8.12	8.54	8.92	9.50
##	[50,]	6.30	6.74	7.10	7.40	7.66	7.96	8.24	8.52	9.00	9.32	9.82	10.30
##	[51,]	5.82	6.18	6.56	6.84	7.04	7.28	7.58	7.92	8.30	8.84	9.34	9.94
##	[52,]	6.20	6.56	6.74	7.22	7.48	7.78	8.02	8.36	8.86	9.22	9.64	10.12
##	[53,]	5.92	6.34	6.60	6.90	7.30	7.50	7.80	8.08	8.46	8.88	9.42	9.88
##	[54,]	5.42	5.66	6.08	6.40	6.86	7.38	7.88	8.40	8.82	9.20	9.60	10.04
##	[55,]	5.46	5.72	6.00	6.30	6.78	7.26	7.72	8.16	8.58	9.00	9.48	9.88
##	[56,]	6.12	6.36	6.62	7.16	7.50	7.92	8.50	9.00	9.58	10.18	10.90	11.60
##	[57,]	8.02	8.30	8.56	9.00	9.32	9.80	10.18	10.54	11.06	11.50	11.96	12.56
##	[58,]	6.42	6.84	7.08	7.68	8.06	8.60	8.90	9.42	9.80	10.18	10.64	11.02
##	[59,]	6.92	7.26	7.68	8.08	8.40	8.80	9.10	9.62	9.96	10.46	10.84	11.28
##	[60,]	8.02	8.30	8.66	9.18	9.54	9.94	10.22	10.60	10.88	11.24	11.62	11.94
##	[61,]	6.68	6.96	7.20	7.64	8.14	8.46	8.90	9.24	9.60	9.94	10.48	11.00
##	[62,]	5.80	6.26	6.44	6.92	7.38	7.76	8.08	8.50	8.88	9.38	9.74	10.06
##	[63,]	6.34	6.66	6.94	7.16	7.52	7.96	8.36	8.76	9.08	9.44	9.86	10.28
##	[64,]	6.98	7.22	7.50	8.00	8.30	8.80	9.14	9.64	10.08	10.50	11.04	11.56
##	[65,]	5.72	5.94	6.18	6.62	7.08	7.32	7.74	8.16	8.58	9.02	9.52	10.04
##	[66,]	6.66	6.90	7.10	7.40	7.62	8.00	8.60	9.12	9.66	10.16	10.72	11.22
##	[67,]	5.96	6.28	6.62	6.78	7.16	7.52	7.82	8.16	8.54	8.84	9.24	9.60
##	[68,]	6.22	6.56	6.90	7.18	7.60	8.18	8.58	9.20	9.58	10.08	10.44	10.76
##	[69,]	6.38	6.56	6.80	7.08	7.48	7.74	8.18	8.60	8.98	9.50	9.84	10.32

##	[70,]	6.88	7.12	7.40	7.76	8.04	8.42	8.86	9.40	9.84	10.28	10.52	10.98
##	[71,]	5.78	6.12	6.32	6.62	6.96	7.38	7.58	7.92	8.24	8.80	9.22	9.58
##	[72,]	6.58	6.74	7.10	7.48	7.82	8.22	8.54	8.90	9.28	9.56	9.90	10.20
##	[73,]	5.28	5.70	5.98	6.34	6.68	7.14	7.54	7.76	8.22	8.66	9.24	9.68
##	[74,]	6.88	7.22	7.48	7.78	8.12	8.48	8.88	9.28	9.76	10.14	10.62	11.04
##	[75,]	7.52	7.74	8.04	8.40	8.80	9.12	9.56	9.92	10.36	10.78	11.30	11.94
##	[76,]	5.32	5.74	6.04	6.44	6.80	7.18	7.52	7.88	8.26	8.68	9.18	9.74
##	[77,]	6.52	6.84	7.26	7.86	8.12	8.52	8.94	9.42	9.78	10.14	10.68	11.40
##	[78,]	6.48	6.90	7.22	7.48	7.78	8.26	8.66	9.06	9.58	9.88	10.08	10.60
##	[79,]	5.38	5.66	5.98	6.24	6.84	7.26	7.70	8.06	8.44	8.86	9.40	9.90
##	[80,]	6.74	7.02	7.24	7.54	7.94	8.42	8.88	9.36	9.90	10.60	11.04	11.60
##	[81,]	6.36	6.52	6.70	7.10	7.44	8.02	8.58	9.08	9.38	9.78	10.22	10.68
##	[82,]	6.42	6.74	7.04	7.24	7.54	7.92	8.34	8.80	9.20	9.60	10.00	10.58
##	[83,]	5.48	5.72	6.12	6.50	6.76	7.00	7.42	7.78	8.22	8.62	8.98	9.44
##	[84,]	5.56	5.94	6.20	6.54	6.84	7.20	7.44	7.66	8.16	8.44	8.98	9.38
##	[85,]	6.46	6.96	7.50	7.80	8.26	8.64	9.12	9.60	9.98	10.54	10.98	11.42
##	[86,]	6.56	6.90	7.30	7.88	8.12	8.46	8.72	9.18	9.58	10.04	10.44	11.16
##	[87,]	7.40	7.70	7.92	8.22	8.62	9.00	9.42	9.78	10.50	10.88	11.36	11.78
##	[88,]	7.46	7.80	8.12	8.48	8.92	9.40	9.70	10.06	10.44	10.70	11.30	11.66
##	[89,]	5.04	5.24	5.60	5.92	6.32	6.80	7.14	7.38	7.72	8.08	8.54	9.10
##	[90,]	6.12	6.40	6.66	7.04	7.30	7.82	8.26	8.80	9.18	9.50	9.92	10.56
##	[91,]	6.72	6.94	7.30	7.62	7.96	8.44	8.82	9.18	9.66	10.26	10.64	10.98
##	[92,]	6.98	7.32	7.76	8.06	8.48	8.88	9.28	9.72	10.18	10.58	11.02	11.46
##	[93,]	6.28	6.58	6.96	7.18	7.68	8.04	8.48	8.72	9.20	9.56	9.94	10.40
##	[94,]	7.44	7.80	8.12	8.48	8.68	9.08	9.74	10.02	10.50	10.92	11.46	11.90
##	[95,]	6.60	6.90	7.16	7.48	7.80	8.26	8.58	8.94	9.26	9.54	9.92	10.30
##	[96,]	6.84	7.20	7.64	7.96	8.40	8.74	9.04	9.50	10.04	10.52	10.88	11.38
##	[97,]	7.96	8.18	8.42	8.88	9.20	9.50	10.00	10.42	10.88	11.18	11.58	12.10
##	[98,]	6.34	6.66	7.08	7.46	7.88	8.30	8.84	9.32	9.94	10.42	11.08	11.60
##	[99,]	7.72	7.98	8.34	8.80	9.30	9.82	10.30	10.68	11.04	11.40	11.60	12.00
##	[100,]	6.84	7.10	7.48	7.84	8.20	8.74	9.16	9.74	10.30	10.82	11.34	11.90
##	[101,]	8.28	8.66	8.94	9.38	9.74	10.10	10.46	10.84	11.28	11.54	11.94	12.24
##	[102,]	7.96	8.36	8.62	9.00	9.48	9.82	10.30	10.60	11.16	11.60	11.96	12.34
##	[103,]	5.30	5.56	5.82	6.10	6.26	6.52	6.88	7.26	7.74	8.08	8.54	9.04
##	[104,]	5.98	6.30	6.52	6.86	7.00	7.24	7.54	8.02	8.40	8.90	9.20	9.76
##	[105,]	6.10	6.30	6.58	6.90	7.18	7.80	8.26	8.64	9.10	9.58	9.94	10.32
##	[106,]	5.86	6.26	6.56	6.82	7.24	7.68	8.16	8.64	8.98	9.52	9.82	10.20
##	[107,]	5.90	6.14	6.42	6.56	6.96	7.30	7.70	7.92	8.34	8.52	8.96	9.18
##	[108,]	6.12	6.54	6.82	7.08	7.52	8.00	8.46	9.00	9.48	9.86	10.24	10.58
##	[,49]	[,50]	[,51]	[,52]	[,53]	[,54]	[,55]	[,56]	[,57]	[,58]	[,59]	[,60]	
##	[1,]	9.34	10.06	11.08	11.92	12.96	13.80	14.76	15.82	16.66	17.70	18.66	19.52
##	[2,]	12.26	12.76	13.28	14.08	14.66	15.48	16.34	17.12	17.82	18.26	19.00	19.62
##	[3,]	11.76	12.18	12.74	13.18	13.82	14.50	15.08	15.86	16.42	17.18	17.94	18.80
##	[4,]	12.06	12.46	13.16	13.78	14.18	15.06	15.52	16.20	16.84	17.38	18.06	18.62
##	[5,]	11.78	12.16	12.76	13.28	14.12	14.64	15.14	16.04	16.78	17.28	18.20	18.72
##	[6,]	11.74	12.22	12.82	13.42	13.88	14.38	15.20	15.68	16.30	16.56	17.34	17.84
##	[7,]	10.28	10.82	11.46	12.20	13.00	13.68	14.44	15.24	16.12	17.08	17.98	18.82
##	[8,]	11.80	12.28	12.84	13.32	14.04	14.60	15.24	15.80	16.36	17.04	17.52	18.26
##	[9,]	11.60	12.26	13.16	13.68	14.68	15.42	15.98	16.64	17.28	17.86	18.54	19.26
##	[10,]	11.86	12.32	13.08	13.74	14.48	15.20	15.94	17.14	17.82	18.68	19.48	20.06
##	[11,]	10.30	10.90	11.66	12.20	12.94	13.66	14.56	15.20	15.94	16.62	17.28	18.08
##	[12,]	10.72	11.34	11.84	12.40	13.08	13.96	14.78	15.60	16.42	17.22	18.06	19.02
##	[13,]	11.58	12.06	12.60	13.34	13.90	14.54	15.32	16.26	16.82	17.42	18.26	18.80
##	[14,]	9.80	10.42	10.92	11.48	11.96	12.68	13.80	14.80	15.66	16.46	16.94	17.88



```

## [15,] 12.06 12.38 12.90 13.46 14.02 14.68 15.40 16.04 16.56 17.22 17.88 18.58
## [16,] 11.26 11.68 12.10 12.60 13.16 14.02 14.76 15.54 16.52 17.28 17.88 18.56
## [17,] 11.32 11.76 12.12 13.00 13.66 14.44 15.24 15.86 16.44 17.22 17.82 18.32
## [18,] 11.16 11.48 12.16 12.64 13.14 13.82 14.60 15.30 15.88 16.74 17.36 18.10
## [19,] 9.82 10.24 10.72 11.38 12.20 12.88 13.74 14.56 15.30 16.24 17.08 17.78
## [20,] 11.84 12.24 12.80 13.44 14.06 14.62 15.38 15.92 16.56 17.00 17.88 18.44
## [21,] 11.58 12.12 12.64 12.96 13.58 14.26 15.06 15.62 16.48 17.38 18.18 19.18
## [22,] 10.10 10.82 11.62 12.12 12.80 13.52 14.12 15.04 15.82 16.38 17.36 18.24
## [23,] 12.86 13.28 13.86 14.38 15.08 15.56 15.96 16.50 17.14 17.74 18.30 18.86
## [24,] 11.62 12.14 12.86 13.52 14.52 15.26 15.72 16.48 17.04 17.52 18.08 18.74
## [25,] 11.26 11.80 12.22 12.86 13.46 13.96 14.58 15.04 15.90 16.60 17.10 17.82
## [26,] 11.78 12.22 12.76 13.46 14.32 14.96 15.48 16.46 17.36 18.18 19.06 19.70
## [27,] 10.50 11.06 11.78 12.34 13.08 13.80 14.42 15.44 16.24 17.34 18.06 19.20
## [28,] 11.84 12.36 13.08 13.74 14.42 15.16 15.70 16.28 17.02 17.70 18.58 19.38
## [29,] 10.90 11.26 11.66 12.34 13.16 13.74 14.52 15.02 15.68 16.38 16.82 17.52
## [30,] 9.86 10.58 11.20 11.90 12.42 13.12 13.90 14.42 15.08 15.84 16.80 17.44
## [31,] 12.06 12.50 13.12 13.78 14.18 14.74 15.40 16.06 16.56 17.10 17.70 18.30
## [32,] 11.20 11.70 12.40 13.04 13.72 14.54 15.18 15.82 16.40 17.18 18.02 18.64
## [33,] 11.64 12.20 12.78 13.38 14.12 14.70 15.50 16.24 17.06 17.60 18.36 19.08
## [34,] 12.38 13.06 13.70 14.58 15.24 15.76 16.42 17.10 17.80 18.18 18.84 19.30
## [35,] 11.10 11.48 11.92 12.72 13.38 14.08 14.72 15.64 16.38 17.08 17.90 18.54
## [36,] 11.60 12.12 12.64 13.30 13.84 14.36 15.30 15.68 16.28 16.60 17.38 17.92
## [37,] 11.22 11.70 12.24 12.78 13.42 14.14 15.10 15.80 16.48 17.50 18.18 18.96
## [38,] 10.54 10.98 11.58 12.10 12.70 13.52 14.16 14.80 15.68 16.48 17.54 18.40
## [39,] 9.46 9.98 10.74 11.20 12.08 13.08 14.00 15.00 16.08 17.02 17.82 18.54
## [40,] 11.74 12.20 12.70 13.26 13.92 14.66 15.02 15.66 16.22 16.98 17.62 18.26
## [41,] 11.94 12.50 13.10 13.92 14.70 15.32 16.10 16.58 17.40 18.10 18.80 19.42
## [42,] 12.12 12.64 13.14 13.80 14.46 15.12 15.74 16.38 17.16 17.78 18.40 19.34
## [43,] 12.18 12.68 13.22 13.62 14.10 14.86 15.62 16.34 17.20 18.00 18.64 19.38
## [44,] 13.20 13.64 14.20 14.54 15.16 15.68 16.40 17.16 17.78 18.32 19.06 19.58
## [45,] 13.06 13.72 14.24 14.76 15.30 15.76 16.38 17.00 17.76 18.16 19.02 19.74
## [46,] 12.82 13.46 14.22 15.04 15.74 16.54 17.24 18.00 18.74 19.32 19.86 20.42
## [47,] 12.30 12.90 13.60 14.38 15.04 16.00 16.68 17.68 18.38 19.06 19.70 20.16
## [48,] 11.94 12.34 12.90 13.74 14.58 15.32 15.96 16.90 17.44 18.04 18.46 19.02
## [49,] 10.04 10.72 11.30 11.94 12.84 13.64 14.58 15.40 16.40 16.96 17.72 18.46
## [50,] 10.72 11.04 11.66 12.18 12.94 13.54 14.24 14.82 15.56 16.26 16.84 17.46
## [51,] 10.24 10.74 11.26 11.96 12.44 13.10 14.08 14.76 15.96 16.64 17.42 18.26
## [52,] 10.72 11.16 11.96 12.66 13.32 14.18 15.02 16.00 16.58 17.26 17.76 18.48
## [53,] 10.46 11.02 11.64 12.48 13.00 13.62 14.48 15.42 16.32 17.04 18.00 18.62
## [54,] 10.50 10.80 11.38 11.92 12.42 13.08 13.90 14.74 15.66 16.56 17.20 18.00
## [55,] 10.32 10.70 11.08 11.58 12.22 12.92 13.96 14.66 15.70 16.30 16.98 17.82
## [56,] 12.42 12.98 13.54 14.48 15.38 16.14 17.10 17.72 18.52 19.12 19.60 20.22
## [57,] 12.96 13.40 13.96 14.48 14.98 15.34 15.78 16.26 16.54 16.88 17.54 18.20
## [58,] 11.38 12.02 12.50 13.18 13.84 14.20 14.80 15.42 16.30 17.08 17.86 18.62
## [59,] 11.66 12.16 12.66 13.30 13.80 14.32 14.90 15.50 16.24 17.00 17.74 18.50
## [60,] 12.40 12.80 13.14 13.52 14.14 14.64 15.18 15.64 16.28 16.60 17.20 17.98
## [61,] 11.60 12.14 12.88 13.52 14.50 15.00 15.92 16.60 17.16 17.78 18.48 19.06
## [62,] 10.54 11.20 11.86 12.38 13.10 13.82 14.44 15.24 15.92 16.94 18.04 18.86
## [63,] 10.80 11.24 11.92 12.42 13.28 14.16 14.90 15.68 16.50 17.36 18.34 18.96
## [64,] 12.00 12.60 13.12 13.94 14.68 15.52 16.48 17.00 17.60 18.40 19.00 19.76
## [65,] 10.48 10.88 11.44 11.94 12.60 13.28 14.12 14.86 15.56 16.08 16.70 17.24
## [66,] 11.94 12.64 13.24 13.72 14.44 15.06 15.70 16.50 17.26 17.98 18.70 19.30
## [67,] 10.28 10.72 11.38 12.18 12.76 13.64 14.42 15.16 16.26 17.04 17.78 18.56
## [68,] 11.34 11.74 12.46 12.88 13.50 14.12 14.78 15.34 15.92 16.88 17.66 18.24

```

```

## [69,] 10.92 11.48 11.98 12.76 13.24 13.98 14.92 15.56 16.20 17.02 17.96 18.72
## [70,] 11.32 11.86 12.34 13.02 13.74 14.34 15.12 15.62 16.36 17.28 18.28 19.08
## [71,] 9.94 10.54 11.32 12.04 12.74 13.70 14.20 15.18 15.80 16.64 17.40 18.16
## [72,] 10.66 11.24 11.64 12.16 12.70 13.52 14.06 15.00 15.66 16.38 17.12 17.94
## [73,] 10.20 10.62 11.26 11.84 12.68 13.52 14.18 15.06 15.92 16.38 17.20 17.94
## [74,] 11.78 12.36 13.04 13.46 14.16 14.74 15.38 15.96 16.46 17.18 17.74 18.46
## [75,] 12.58 13.08 13.64 14.00 14.40 14.88 15.70 16.14 16.60 17.24 17.68 18.32
## [76,] 10.24 10.88 11.56 12.28 12.88 13.46 13.90 14.58 15.32 15.82 16.64 17.08
## [77,] 11.90 12.42 13.04 13.80 14.44 15.08 15.68 16.18 16.86 17.42 18.08 18.82
## [78,] 11.10 11.46 11.98 12.64 13.36 13.96 14.82 15.70 16.34 17.10 17.90 18.38
## [79,] 10.32 10.68 11.10 11.74 12.58 13.28 14.04 14.82 15.54 16.16 17.08 17.86
## [80,] 12.30 12.90 13.58 14.38 14.92 15.88 16.62 17.24 17.94 19.00 19.64 20.18
## [81,] 11.24 12.00 12.68 13.48 14.26 14.86 15.62 16.12 16.92 17.74 18.52 19.16
## [82,] 11.04 11.46 12.18 12.80 13.56 14.30 14.86 15.88 16.50 17.36 18.12 18.94
## [83,] 10.02 10.36 11.14 11.80 12.46 13.40 14.06 15.00 15.64 16.14 16.78 17.56
## [84,] 9.82 10.22 10.78 11.52 12.34 13.02 13.74 14.38 15.32 16.04 16.98 17.66
## [85,] 11.74 12.04 12.72 13.36 13.94 14.54 15.20 15.74 16.26 17.16 17.96 18.60
## [86,] 11.68 12.26 12.86 13.62 14.22 14.90 15.52 16.06 16.62 17.18 17.76 18.60
## [87,] 12.32 12.88 13.52 14.04 14.70 15.18 15.70 16.34 17.16 17.78 18.64 19.54
## [88,] 12.04 12.30 12.90 13.76 14.32 15.06 15.60 16.04 17.00 17.42 18.20 18.82
## [89,] 9.80 10.48 11.16 12.16 12.96 13.74 14.78 15.82 16.82 17.78 18.52 19.32
## [90,] 11.12 11.66 12.62 13.44 14.24 14.98 15.76 16.80 17.34 18.00 18.80 19.52
## [91,] 11.36 11.96 12.48 13.26 13.98 14.68 15.32 16.06 16.86 17.76 18.64 19.16
## [92,] 11.88 12.36 12.90 13.16 13.76 14.28 15.14 15.66 16.40 17.12 17.92 18.52
## [93,] 10.86 11.40 11.96 12.64 13.00 13.84 14.44 15.20 15.94 16.58 17.26 17.98
## [94,] 12.40 13.02 13.54 14.10 14.66 15.12 15.76 16.44 16.94 17.70 18.40 18.94
## [95,] 10.88 11.44 12.06 12.76 13.40 13.94 14.94 15.80 16.66 17.54 18.32 19.08
## [96,] 11.92 12.38 12.92 13.58 14.14 15.06 15.74 16.36 17.14 17.88 18.54 19.52
## [97,] 12.46 12.94 13.32 13.76 14.20 14.74 15.54 16.14 17.04 18.00 18.70 19.40
## [98,] 12.26 12.84 13.42 14.38 14.86 15.54 16.58 17.22 17.90 18.68 19.38 20.12
## [99,] 12.28 12.82 13.32 13.72 14.24 14.68 15.58 16.40 17.10 17.94 18.56 19.58
## [100,] 12.56 13.20 13.92 14.76 15.52 16.28 16.96 17.58 18.28 19.00 19.46 20.12
## [101,] 12.54 12.88 13.48 14.10 14.58 15.36 15.98 16.48 17.06 17.56 18.40 18.88
## [102,] 12.54 13.04 13.46 14.36 14.78 15.42 16.12 16.54 17.24 17.68 18.56 19.04
## [103,] 9.62 10.12 10.82 11.40 12.24 13.30 14.26 14.88 15.70 16.42 17.02 17.76
## [104,] 10.30 10.72 11.16 12.02 12.72 13.60 14.48 15.28 15.82 16.32 17.06 17.66
## [105,] 10.66 11.16 11.96 12.54 13.24 13.58 14.44 15.30 16.18 16.76 17.62 18.34
## [106,] 10.80 11.22 11.82 12.34 12.86 13.44 14.42 15.04 15.76 16.62 17.26 18.04
## [107,] 9.58 10.02 10.62 11.44 12.00 12.54 13.58 14.64 15.46 16.22 16.74 17.54
## [108,] 11.04 11.50 12.30 12.70 13.34 13.98 14.76 15.32 15.92 16.64 17.48 18.10
##      [,61] [,62] [,63] [,64] [,65] [,66] [,67] [,68] [,69] [,70] [,71] [,72]
## [1,] 20.18 21.18 22.48 23.04 24.08 25.46 26.40 28.00 28.88 29.96 31.16 32.40
## [2,] 20.12 20.78 21.54 21.88 22.68 23.16 23.82 24.86 25.44 26.26 27.08 27.78
## [3,] 19.62 20.28 21.26 21.76 22.60 23.42 24.20 25.04 25.78 26.66 27.76 28.46
## [4,] 19.22 19.86 20.46 21.26 21.92 22.66 23.24 24.22 24.98 25.60 26.18 27.16
## [5,] 19.62 20.30 21.06 21.78 22.70 23.58 24.28 24.90 25.62 26.28 27.16 27.74
## [6,] 18.70 19.46 20.28 21.18 21.84 22.78 23.44 24.20 24.86 25.54 26.58 27.24
## [7,] 19.62 20.56 21.36 22.34 23.08 24.16 25.14 26.02 27.08 28.08 28.98 29.96
## [8,] 18.88 19.78 20.72 21.24 22.38 22.98 23.80 24.80 25.60 26.36 27.18 28.04
## [9,] 19.92 20.58 21.14 22.14 22.90 23.28 24.14 24.82 25.48 26.18 26.78 27.56
## [10,] 20.78 21.66 22.34 22.98 23.54 24.34 25.10 25.56 26.42 27.22 28.14 29.18
## [11,] 18.86 19.84 20.48 21.18 22.00 22.64 23.60 24.32 25.04 26.04 26.84 27.52
## [12,] 19.88 20.76 21.42 22.06 23.18 24.02 25.28 26.20 27.54 28.16 29.12 30.22
## [13,] 19.26 19.88 20.50 20.96 21.56 22.26 23.08 23.64 24.26 25.10 25.92 26.70

```

```

## [14,] 18.52 19.54 20.06 20.68 21.54 22.34 22.94 23.72 24.76 25.80 26.76 27.38
## [15,] 19.20 19.80 20.50 21.34 22.02 22.62 23.44 23.94 24.52 25.34 26.08 26.70
## [16,] 19.24 19.92 20.68 21.56 22.40 23.32 24.18 25.04 25.90 26.56 27.54 28.20
## [17,] 18.84 19.48 20.16 20.74 21.36 21.96 22.82 23.42 23.92 24.54 25.18 25.84
## [18,] 18.60 19.14 20.02 20.38 21.20 21.78 22.46 23.10 23.72 24.40 25.26 26.04
## [19,] 18.60 19.68 20.40 21.46 22.48 23.38 24.42 25.20 26.12 27.12 28.12 29.36
## [20,] 19.00 20.04 20.58 21.62 22.28 22.94 23.52 23.96 24.42 25.10 25.90 26.96
## [21,] 20.02 20.64 21.48 22.22 23.22 24.00 25.04 25.92 26.70 27.70 28.48 29.14
## [22,] 19.30 19.88 20.58 21.28 22.10 23.22 23.68 24.62 25.58 26.42 27.24 28.14
## [23,] 19.26 19.86 20.40 21.04 21.62 22.18 22.68 23.20 23.84 24.42 24.90 25.68
## [24,] 19.38 19.92 20.52 21.20 21.94 22.62 23.16 23.82 24.44 25.16 25.96 26.80
## [25,] 18.44 19.30 19.86 20.48 21.26 21.76 22.16 23.04 23.76 24.76 25.58 26.26
## [26,] 20.40 21.00 21.80 22.42 23.00 23.90 24.52 25.26 26.02 27.00 28.00 28.54
## [27,] 19.70 20.56 21.24 22.00 22.72 23.84 24.66 25.96 26.90 27.88 28.68 29.68
## [28,] 20.06 20.86 21.74 22.58 23.26 23.90 24.66 25.42 26.22 26.84 27.52 28.42
## [29,] 18.20 19.02 19.66 20.24 20.88 21.64 22.48 23.12 23.80 24.88 25.48 26.18
## [30,] 18.44 19.40 20.00 20.92 22.10 22.80 23.84 24.64 25.60 26.64 27.38 28.44
## [31,] 18.96 19.50 20.20 21.04 21.74 22.50 23.18 23.84 24.62 25.08 25.96 26.76
## [32,] 19.48 20.32 21.26 21.90 22.78 23.48 24.12 24.44 25.10 25.76 26.72 27.46
## [33,] 19.66 20.28 21.00 21.52 22.10 22.94 23.54 24.28 25.12 25.82 26.50 27.30
## [34,] 20.12 20.64 21.20 21.78 22.58 23.38 24.18 24.68 25.28 26.14 26.74 27.56
## [35,] 19.10 19.66 20.06 20.98 21.94 22.56 23.36 24.20 25.00 26.10 26.98 27.60
## [36,] 18.82 19.46 20.60 21.40 22.22 22.94 23.48 24.14 25.14 25.96 27.04 27.66
## [37,] 19.56 20.28 21.10 21.80 23.06 23.64 24.54 25.32 25.98 26.84 27.76 28.60
## [38,] 19.40 20.38 21.12 22.88 23.88 25.00 25.92 27.04 27.86 28.88 29.88 30.80
## [39,] 19.34 20.16 20.84 21.76 22.64 23.70 24.40 25.38 26.40 27.46 28.60 29.30
## [40,] 19.32 20.28 21.08 21.62 22.50 23.20 24.22 25.06 26.22 26.98 27.74 28.44
## [41,] 20.14 20.88 21.58 22.48 23.06 23.72 24.38 25.22 25.90 26.72 27.40 28.10
## [42,] 20.28 21.22 22.02 22.62 23.46 24.06 24.34 24.90 25.60 26.34 27.04 28.04
## [43,] 20.40 21.02 21.66 22.52 23.08 23.78 24.28 25.02 25.58 26.48 27.46 28.38
## [44,] 20.70 21.12 21.68 22.46 22.90 23.70 24.20 25.16 25.96 26.58 27.58 28.10
## [45,] 20.54 21.22 22.26 22.68 23.34 24.00 24.38 25.28 26.10 26.78 27.50 28.06
## [46,] 20.80 21.38 21.90 22.46 23.04 23.44 24.08 24.78 25.40 26.24 26.88 27.78
## [47,] 20.84 21.40 22.04 22.50 23.32 23.70 24.56 25.66 26.22 26.98 27.84 28.58
## [48,] 19.68 20.58 21.18 21.82 22.86 23.68 24.44 25.38 26.02 26.94 27.80 28.38
## [49,] 19.20 19.92 20.62 21.46 22.42 22.92 23.78 24.50 25.40 26.24 27.06 27.90
## [50,] 18.12 19.16 19.78 20.40 21.18 21.96 22.94 23.56 24.28 25.26 26.16 26.82
## [51,] 18.82 19.44 19.94 20.70 21.48 22.00 22.78 23.90 24.72 25.56 26.66 27.38
## [52,] 19.00 19.46 19.98 20.72 21.42 22.12 22.50 23.52 24.24 25.20 26.18 26.86
## [53,] 19.26 19.74 20.50 21.02 22.02 22.60 23.30 23.90 24.96 25.78 26.78 27.62
## [54,] 18.78 19.70 20.42 21.70 22.20 22.92 23.70 24.42 25.38 26.40 27.10 27.98
## [55,] 18.54 19.56 20.36 21.24 22.02 22.88 23.86 24.54 25.72 26.68 27.66 28.30
## [56,] 20.84 21.90 22.42 22.92 23.54 24.02 24.82 25.76 26.48 27.54 28.38 29.10
## [57,] 18.94 19.60 20.08 20.70 21.66 22.30 22.94 23.66 24.48 25.44 26.14 26.74
## [58,] 19.42 20.36 20.86 21.70 22.66 23.64 24.48 25.20 26.26 27.20 28.06 28.90
## [59,] 19.28 19.98 20.78 21.64 22.46 23.30 23.88 24.58 25.56 26.28 27.18 27.82
## [60,] 18.52 19.56 19.96 21.00 21.88 22.68 23.32 24.36 25.04 25.98 26.56 27.44
## [61,] 19.46 20.42 20.74 21.30 22.04 22.64 22.94 23.78 24.32 25.10 25.72 26.60
## [62,] 19.76 20.58 21.32 22.24 23.14 23.92 25.08 25.84 26.62 27.66 28.76 29.68
## [63,] 19.88 20.68 21.46 22.34 23.00 23.98 24.76 25.58 26.36 27.20 28.44 29.32
## [64,] 20.10 21.24 21.88 22.44 23.12 23.66 24.64 25.52 26.22 27.30 28.24 28.82
## [65,] 18.16 18.84 19.74 20.34 21.22 21.86 22.56 23.40 23.98 24.86 25.86 26.72
## [66,] 19.86 20.72 21.26 21.68 22.34 23.08 23.82 24.96 25.46 26.22 27.14 27.82
## [67,] 19.24 19.98 20.72 21.20 21.88 22.72 23.64 24.70 25.62 26.44 27.48 28.18

```

```

## [68,] 19.06 19.58 20.02 20.58 21.32 22.04 22.62 23.38 23.96 24.94 25.84 26.30
## [69,] 19.34 20.08 20.82 21.62 22.26 22.94 24.04 24.68 25.56 26.24 27.12 28.14
## [70,] 19.82 20.38 21.16 22.10 22.82 23.60 24.30 24.92 25.56 26.40 27.20 27.98
## [71,] 18.96 19.86 20.62 21.30 22.30 23.32 24.00 24.72 25.52 26.60 27.44 28.12
## [72,] 18.52 19.42 20.12 20.68 21.68 22.32 23.24 23.80 24.76 25.58 26.38 27.38
## [73,] 18.92 19.46 20.26 21.02 21.80 22.58 23.46 24.18 25.34 26.18 27.38 28.34
## [74,] 19.22 19.92 20.52 21.34 22.28 22.88 23.62 24.24 25.10 25.84 26.48 27.20
## [75,] 18.94 19.64 20.66 21.16 22.04 22.60 23.50 24.18 25.06 25.62 26.28 26.88
## [76,] 17.94 18.72 19.46 20.16 21.34 22.18 23.02 24.12 25.00 26.28 27.14 27.94
## [77,] 19.54 20.36 21.12 21.84 22.80 23.36 24.30 24.96 25.44 26.18 26.86 27.90
## [78,] 19.28 20.34 21.12 21.98 22.74 23.64 24.46 25.28 25.88 26.78 27.86 28.80
## [79,] 18.76 19.20 20.06 20.86 21.48 22.36 23.00 23.66 24.72 25.66 26.66 27.54
## [80,] 20.86 21.24 21.90 22.50 23.18 23.88 24.50 25.18 25.86 26.74 27.42 28.24
## [81,] 19.76 20.60 21.34 22.38 23.04 23.90 24.98 25.76 26.76 27.86 28.60 29.46
## [82,] 19.82 20.70 21.40 22.26 23.40 24.40 25.20 26.08 26.66 27.66 28.38 29.10
## [83,] 18.12 18.82 19.64 20.24 20.96 21.78 22.34 23.34 23.98 25.18 26.06 26.80
## [84,] 18.18 18.98 19.64 20.46 21.34 21.90 22.84 23.72 24.62 25.34 26.36 27.30
## [85,] 19.36 19.98 20.90 21.68 22.56 23.24 24.04 25.18 25.90 26.62 27.38 28.20
## [86,] 19.22 20.20 21.08 22.08 22.90 23.64 24.30 25.22 25.98 26.76 27.52 28.38
## [87,] 20.22 20.88 21.44 22.02 22.88 23.38 24.34 24.78 25.44 25.96 26.84 27.52
## [88,] 19.44 20.30 20.82 21.94 22.40 23.30 24.08 24.88 25.84 26.72 27.64 28.22
## [89,] 20.14 20.88 21.50 22.18 23.16 23.72 24.34 25.00 25.80 26.66 27.56 28.42
## [90,] 20.28 20.92 21.60 22.52 23.52 24.10 24.70 25.70 26.34 27.18 27.98 28.58
## [91,] 19.98 20.60 21.24 22.26 22.86 23.60 24.18 24.74 25.34 26.06 27.06 27.90
## [92,] 19.20 19.88 20.38 21.18 21.92 22.66 23.28 24.04 24.70 25.46 26.22 26.74
## [93,] 18.64 19.16 19.98 20.68 21.26 22.00 22.96 23.74 24.42 25.14 26.06 26.82
## [94,] 19.58 20.42 21.00 21.60 22.40 23.08 23.54 24.38 24.82 25.68 26.34 27.06
## [95,] 19.78 20.60 21.26 22.04 23.04 23.74 24.54 25.30 25.98 27.12 28.04 29.16
## [96,] 20.30 21.34 22.02 22.82 23.52 24.26 24.52 25.16 25.72 26.60 27.44 28.54
## [97,] 20.06 20.72 21.64 22.32 23.28 23.70 24.38 25.04 25.92 26.56 27.24 27.78
## [98,] 20.84 21.34 22.02 22.52 23.30 24.10 24.80 25.44 26.24 27.12 27.82 28.54
## [99,] 20.22 20.92 21.70 22.38 23.08 24.12 24.62 25.46 26.00 27.10 27.80 28.58
## [100,] 20.64 21.42 21.94 22.50 23.26 23.68 24.26 25.10 25.84 26.70 27.44 28.06
## [101,] 19.38 20.18 20.86 21.54 22.24 22.96 23.66 24.44 25.48 26.34 27.20 27.72
## [102,] 19.68 20.48 21.08 21.92 22.62 23.22 24.02 24.80 25.78 26.88 27.76 28.30
## [103,] 18.68 19.50 20.60 21.20 21.92 22.70 23.40 24.34 24.90 25.82 27.04 28.00
## [104,] 18.44 19.14 19.96 20.44 21.26 21.90 22.44 23.38 23.98 24.88 25.94 26.72
## [105,] 18.98 19.54 20.04 20.56 21.42 22.04 22.82 23.60 24.52 25.44 26.26 27.24
## [106,] 19.02 19.58 20.02 20.70 21.70 22.44 23.06 24.04 24.78 25.64 26.68 27.34
## [107,] 18.32 19.20 19.86 20.46 21.26 21.86 22.70 23.80 24.58 25.60 26.66 27.24
## [108,] 18.90 19.50 19.88 20.46 21.20 21.88 22.32 23.26 23.80 24.62 25.50 26.10
##      [,73] [,74] [,75] [,76] [,77] [,78] [,79] [,80] [,81] [,82] [,83] [,84]
## [1,] 33.44 34.22 35.30 36.38 37.52 38.72 39.94 40.64 40.98 41.06 41.06 41.06
## [2,] 28.48 29.28 29.82 30.68 31.58 32.56 33.60 34.72 35.72 36.42 37.58 38.48
## [3,] 29.12 29.96 30.90 31.68 32.82 33.64 34.40 35.16 36.12 37.18 38.20 39.44
## [4,] 27.70 28.46 29.22 29.90 30.88 31.70 32.46 33.66 34.56 35.62 36.64 38.24
## [5,] 28.48 29.42 30.14 31.14 31.92 32.68 33.34 34.08 35.14 36.18 37.44 39.06
## [6,] 27.96 28.84 29.42 30.10 30.80 31.50 32.24 33.18 34.14 35.36 36.54 37.58
## [7,] 30.68 31.62 32.48 33.32 33.98 34.82 35.58 36.56 37.28 38.52 39.36 40.58
## [8,] 28.94 29.42 30.16 30.86 31.62 32.44 33.14 34.18 35.10 35.86 36.64 38.48
## [9,] 28.36 28.98 30.10 31.00 31.72 32.64 34.22 35.02 35.88 37.44 38.28 39.38
## [10,] 29.88 30.64 31.46 32.62 33.72 34.32 35.06 35.98 37.10 37.90 38.88 39.88
## [11,] 28.44 29.32 30.10 31.04 31.54 32.46 33.68 34.94 36.24 37.22 38.28 39.60
## [12,] 30.94 31.84 32.44 33.34 34.02 34.84 35.82 36.72 37.76 38.70 40.16 41.16

```

```

## [13,] 27.26 27.94 28.54 29.38 30.40 31.06 32.32 33.18 34.56 35.90 36.96 38.48
## [14,] 28.18 29.26 30.06 30.74 31.90 32.66 33.54 34.54 35.30 36.40 37.12 38.06
## [15,] 27.46 28.32 29.06 29.60 30.30 30.90 31.96 32.88 34.26 35.78 37.06 38.54
## [16,] 29.02 29.76 30.38 31.28 32.22 32.94 34.14 35.14 35.96 36.96 37.92 39.04
## [17,] 26.56 27.40 28.18 28.88 29.78 30.96 31.74 33.30 34.18 35.38 36.32 37.44
## [18,] 26.78 27.38 28.30 29.14 30.04 30.88 31.94 33.20 33.96 34.82 36.10 37.12
## [19,] 30.42 31.68 32.76 33.78 34.86 35.72 36.54 37.42 38.70 39.48 40.80 41.78
## [20,] 27.58 28.48 29.28 30.04 30.54 31.30 31.96 32.82 34.02 35.72 36.70 38.04
## [21,] 30.04 30.82 31.90 32.86 33.68 34.50 35.36 36.36 37.10 37.92 39.08 40.40
## [22,] 29.00 29.92 30.92 32.22 33.34 34.36 35.62 36.54 38.04 39.02 40.28 41.46
## [23,] 26.32 27.00 27.76 28.34 29.12 29.94 30.72 31.36 32.44 34.04 35.24 37.04
## [24,] 27.54 28.52 29.54 30.28 31.46 32.60 33.60 34.54 35.76 36.80 37.62 38.60
## [25,] 27.28 28.42 29.42 30.40 31.26 32.12 32.92 33.86 34.84 35.56 37.04 37.96
## [26,] 29.48 30.44 31.12 32.04 33.18 34.36 35.14 35.82 36.56 37.42 38.20 39.24
## [27,] 30.72 31.60 32.28 32.90 33.54 34.52 35.24 35.96 36.82 38.08 39.14 40.32
## [28,] 29.18 30.08 30.88 31.90 33.00 34.14 35.16 36.08 36.92 37.90 38.98 40.08
## [29,] 26.90 27.74 28.40 29.10 29.82 30.50 31.62 32.38 33.40 34.28 35.46 36.50
## [30,] 29.46 30.14 30.98 31.80 32.88 33.80 34.86 35.94 37.18 38.32 39.42 40.18
## [31,] 27.46 28.04 28.80 29.60 30.34 31.02 31.56 32.60 33.28 34.24 35.42 37.08
## [32,] 28.62 29.52 30.44 31.00 31.92 32.70 33.56 34.62 35.92 36.90 38.10 39.68
## [33,] 28.32 28.88 29.76 30.60 31.74 32.52 33.62 34.72 35.90 36.90 37.96 38.92
## [34,] 28.08 28.66 29.44 30.30 31.26 32.08 33.10 34.06 35.40 36.40 37.36 38.72
## [35,] 28.20 28.90 29.62 30.36 31.48 32.12 33.46 34.58 35.98 37.02 38.00 38.82
## [36,] 28.32 29.40 29.94 30.76 31.54 32.20 32.86 33.82 34.66 35.94 37.34 38.34
## [37,] 29.44 30.18 30.70 31.76 32.48 33.58 34.50 35.64 36.62 37.56 38.74 39.64
## [38,] 31.76 32.64 33.56 34.32 35.06 35.94 36.52 37.38 37.98 39.02 39.82 41.10
## [39,] 30.24 31.14 32.06 33.04 34.28 35.28 36.50 37.42 38.40 39.32 40.30 40.92
## [40,] 29.34 30.24 31.00 31.86 32.90 33.94 34.78 35.60 36.38 37.68 38.40 39.60
## [41,] 28.94 29.62 30.38 31.44 32.26 33.00 33.94 35.20 36.20 37.32 38.52 39.78
## [42,] 28.78 29.56 30.20 30.90 31.58 32.26 32.98 33.80 34.60 35.56 36.42 37.20
## [43,] 29.16 29.92 30.74 31.62 32.78 33.58 34.48 35.16 35.72 36.54 37.46 38.44
## [44,] 28.68 29.32 30.04 30.92 31.58 32.34 33.06 33.80 34.80 36.22 37.46 38.68
## [45,] 28.82 29.46 30.30 30.86 31.54 32.24 32.98 33.72 34.60 36.04 37.26 38.82
## [46,] 28.42 29.22 29.78 30.60 31.48 32.70 33.80 35.22 36.70 37.88 38.98 40.08
## [47,] 29.44 30.08 30.74 31.48 32.54 33.64 34.74 35.70 37.14 38.08 39.14 40.08
## [48,] 28.88 29.42 30.32 31.04 31.82 32.80 33.98 34.92 36.02 37.14 37.98 39.28
## [49,] 28.76 29.56 30.64 31.42 32.44 33.34 34.62 35.46 37.14 38.26 39.22 40.70
## [50,] 27.60 28.36 29.04 29.78 30.38 31.04 32.08 32.96 33.92 34.84 35.70 36.98
## [51,] 27.94 28.88 29.56 30.64 31.38 32.26 33.46 34.22 35.30 36.36 37.54 38.82
## [52,] 27.56 28.24 28.90 29.60 30.64 31.76 32.68 34.00 35.12 36.40 37.30 38.74
## [53,] 28.24 29.08 29.72 30.54 31.40 32.10 33.50 34.52 35.88 36.94 37.98 39.18
## [54,] 28.90 29.70 30.54 31.26 32.28 33.02 33.92 34.68 35.78 36.72 37.84 39.18
## [55,] 29.12 29.94 30.78 31.52 32.60 33.38 34.12 35.02 35.94 37.04 37.94 38.94
## [56,] 29.94 30.52 31.38 32.00 33.24 33.96 35.46 36.86 38.26 39.28 40.42 41.50
## [57,] 27.46 28.02 28.70 29.48 30.24 30.86 31.60 32.60 33.34 34.46 35.62 37.00
## [58,] 29.60 30.54 31.30 31.98 32.72 33.46 34.22 34.88 35.58 36.64 38.08 39.72
## [59,] 28.68 29.42 29.98 30.54 31.26 32.16 32.72 33.56 34.40 35.42 36.32 37.36
## [60,] 28.02 28.58 29.44 30.04 30.48 31.22 32.00 32.78 33.64 34.72 35.50 36.76
## [61,] 27.56 28.48 29.26 29.94 30.98 32.12 33.20 34.18 35.28 36.06 37.18 38.22
## [62,] 30.48 31.54 32.56 33.52 34.08 34.90 35.72 36.54 37.62 38.86 40.10 41.28
## [63,] 29.94 31.10 31.98 32.68 33.60 34.44 35.38 36.36 37.30 38.24 39.28 40.16
## [64,] 29.68 30.36 30.94 31.74 32.66 33.68 34.76 35.70 36.80 37.78 38.58 39.76
## [65,] 27.30 27.98 28.80 29.46 30.20 31.42 32.42 33.58 35.04 36.18 37.10 38.40
## [66,] 28.40 29.40 30.08 31.10 31.92 32.80 33.84 34.74 35.96 37.06 38.24 39.50

```

```

## [67,] 29.08 29.66 30.36 31.22 32.22 33.08 34.20 35.18 36.34 37.26 38.50 39.44
## [68,] 27.00 27.84 28.68 29.26 30.10 31.08 31.94 32.94 34.00 35.22 36.52 38.30
## [69,] 29.00 29.76 30.38 31.06 31.82 32.44 33.70 34.40 35.42 37.08 38.00 39.38
## [70,] 28.88 29.84 30.88 31.46 32.60 33.52 34.54 35.32 36.44 37.24 37.98 38.98
## [71,] 28.78 29.56 30.74 31.60 32.40 33.56 34.30 35.58 36.34 37.24 38.26 39.08
## [72,] 28.18 28.76 29.58 30.44 31.16 32.26 33.24 34.22 34.90 35.68 36.82 37.76
## [73,] 29.18 30.18 31.24 31.84 32.64 33.58 34.92 35.88 37.20 38.38 39.78 40.82
## [74,] 27.90 28.58 29.50 30.06 30.70 31.62 32.44 32.98 34.16 35.68 36.88 38.58
## [75,] 27.82 28.64 29.56 30.32 31.04 31.90 32.68 33.46 34.40 35.54 36.92 38.38
## [76,] 28.74 29.54 30.52 31.46 32.38 33.16 34.16 35.30 36.40 37.36 39.06 40.02
## [77,] 28.78 29.62 30.46 31.14 32.10 32.92 33.82 34.68 35.84 36.84 38.26 39.78
## [78,] 29.70 30.64 31.62 32.50 33.16 33.86 34.74 35.68 36.54 37.68 38.60 39.76
## [79,] 28.38 29.14 30.50 31.46 32.34 33.24 34.26 35.38 36.48 37.62 38.92 40.04
## [80,] 29.02 29.76 30.76 31.42 32.32 33.34 34.24 35.56 36.76 37.88 39.00 40.12
## [81,] 30.22 31.04 31.58 32.28 32.98 33.96 34.84 35.92 36.86 38.12 39.18 40.58
## [82,] 29.86 30.84 31.82 32.84 33.92 35.08 36.14 37.16 37.74 38.58 39.58 40.50
## [83,] 27.50 28.32 28.74 29.72 30.66 31.54 32.82 33.84 35.44 36.46 37.32 38.36
## [84,] 28.00 28.96 29.86 30.80 31.90 32.64 33.36 34.34 34.98 36.00 36.86 38.16
## [85,] 28.98 29.82 30.34 31.30 31.88 32.74 33.58 34.60 35.50 36.20 37.10 38.08
## [86,] 29.44 30.22 30.78 31.38 32.02 32.92 33.74 34.48 35.68 36.82 38.30 39.80
## [87,] 28.12 28.90 29.54 30.60 31.88 33.04 34.04 35.10 35.86 36.88 38.10 39.64
## [88,] 28.90 29.64 30.30 31.06 31.78 32.72 33.46 34.56 35.40 36.40 37.32 38.42
## [89,] 29.02 30.10 31.24 32.16 33.72 35.16 36.24 37.72 38.82 39.84 41.04 41.96
## [90,] 29.82 30.72 32.10 32.96 33.76 34.72 35.64 36.76 37.88 39.02 40.12 40.96
## [91,] 28.74 29.68 30.62 31.42 32.52 33.32 34.38 35.38 36.62 37.58 38.50 39.60
## [92,] 27.48 28.64 29.24 30.06 30.66 31.66 32.44 33.12 33.88 34.66 35.64 36.88
## [93,] 27.68 28.14 28.88 29.18 29.84 30.86 31.52 32.72 33.84 35.20 36.14 37.22
## [94,] 27.86 28.52 29.42 30.22 31.22 32.32 33.42 34.30 35.22 36.24 37.44 38.68
## [95,] 29.82 30.94 31.66 32.44 33.22 34.20 35.20 36.24 37.00 38.14 38.98 39.94
## [96,] 29.24 30.14 30.96 31.64 32.38 33.28 34.04 34.86 35.72 36.48 37.72 38.50
## [97,] 28.52 29.02 29.88 30.62 31.28 32.10 32.86 33.54 34.44 35.24 36.30 37.20
## [98,] 29.14 30.02 30.80 31.76 32.58 33.26 34.34 35.60 36.54 38.04 38.96 40.36
## [99,] 29.18 29.82 30.62 31.34 32.16 32.84 33.38 33.94 34.74 35.70 36.82 38.08
## [100,] 28.86 29.76 30.56 31.06 31.92 32.80 34.08 35.28 36.52 37.84 38.92 40.02
## [101,] 28.60 29.04 29.62 30.26 30.94 31.78 32.64 33.62 34.40 35.38 36.20 37.32
## [102,] 29.16 29.56 30.18 30.72 31.52 32.26 33.12 33.88 34.86 36.06 36.84 37.96
## [103,] 28.72 29.54 30.46 31.48 32.46 33.46 34.68 35.76 37.08 37.92 38.76 39.84
## [104,] 27.46 28.26 28.88 29.94 30.78 32.20 33.12 34.32 35.64 36.48 37.36 38.46
## [105,] 27.88 28.68 29.36 30.18 31.14 32.12 33.48 34.40 35.52 36.94 38.06 39.34
## [106,] 28.00 28.86 29.68 30.48 31.34 32.02 33.40 34.24 35.30 36.46 37.94 39.22
## [107,] 28.02 28.90 29.78 30.52 31.56 32.32 33.32 34.66 35.50 36.18 37.10 38.32
## [108,] 26.94 27.76 28.64 29.34 30.28 31.16 32.16 33.14 34.14 35.50 36.72 38.20
##      [,85] [,86] [,87] [,88] [,89] [,90] [,91] [,92] [,93] [,94] [,95] [,96]
## [1,] 41.06 41.06 41.06 41.06 41.06 41.06 41.06 41.06 41.06 41.06 41.06 41.06
## [2,] 39.64 40.76 42.08 43.18 44.52 46.36 48.24 50.00 51.08 51.14 51.14 51.14
## [3,] 40.64 42.36 43.38 44.90 45.92 47.96 49.32 50.46 51.26 51.34 51.34 51.34
## [4,] 39.86 41.56 42.74 44.40 45.70 47.10 48.36 49.06 49.20 49.24 49.24 49.24
## [5,] 40.62 41.90 43.24 44.62 45.82 47.30 48.64 49.24 49.28 49.28 49.28 49.28
## [6,] 38.56 39.86 41.14 42.88 44.62 46.14 48.44 49.56 50.38 50.44 50.44 50.44
## [7,] 41.58 42.54 43.34 44.70 45.96 47.40 48.84 49.28 49.34 49.34 49.34 49.34
## [8,] 39.48 41.06 42.72 44.48 46.08 47.58 48.84 49.92 50.14 50.26 50.26 50.26
## [9,] 40.34 41.62 43.04 44.34 45.64 48.22 49.28 50.38 50.64 50.66 50.66 50.66
## [10,] 40.80 42.06 43.00 44.46 45.64 47.36 48.48 49.60 49.74 49.76 49.76 49.76
## [11,] 41.10 42.22 43.32 44.42 45.50 46.86 48.14 49.16 50.08 50.22 50.22 50.22

```

```

## [12,] 42.04 43.04 44.78 46.08 47.54 48.40 49.34 49.56 49.58 49.58 49.58 49.58
## [13,] 39.66 40.88 42.22 43.78 45.54 47.80 48.92 49.84 50.10 50.12 50.12 50.12
## [14,] 39.10 40.24 41.82 42.82 44.40 46.36 48.24 49.14 50.12 50.22 50.22 50.22
## [15,] 39.76 41.26 42.48 43.86 45.80 47.92 49.44 50.16 50.34 50.36 50.36 50.36
## [16,] 40.18 41.44 42.80 44.14 45.22 46.88 48.02 49.46 49.58 49.60 49.60 49.60
## [17,] 38.54 40.16 41.56 43.04 44.44 45.94 47.50 48.68 49.18 49.22 49.22 49.22
## [18,] 38.20 40.04 41.82 43.40 44.92 46.30 47.80 49.16 49.96 50.00 50.00 50.00
## [19,] 42.94 43.76 44.86 45.68 47.38 48.28 49.70 50.20 50.88 50.88 50.88 50.88
## [20,] 39.38 41.02 42.20 43.60 45.36 47.24 48.46 49.38 49.86 49.86 49.86 49.86
## [21,] 42.06 42.88 44.46 45.42 46.66 48.22 49.36 50.00 50.16 50.16 50.16 50.16
## [22,] 42.70 43.80 45.12 46.06 47.04 47.84 49.60 50.02 50.42 50.44 50.44 50.44
## [23,] 38.30 39.68 41.22 42.70 44.50 46.18 47.62 48.78 49.26 49.38 49.38 49.38
## [24,] 39.70 40.82 42.16 43.26 44.82 47.80 49.72 51.00 51.58 51.60 51.60 51.60
## [25,] 39.86 41.64 43.00 44.80 46.28 47.66 49.14 50.60 50.74 50.74 50.74 50.74
## [26,] 40.30 41.68 43.04 44.22 45.40 47.56 49.10 50.16 50.78 50.90 50.92 50.92
## [27,] 41.30 42.36 43.26 45.08 46.22 47.94 48.94 49.94 50.16 50.18 50.18 50.18
## [28,] 41.26 42.42 43.74 45.00 46.18 47.42 49.02 50.36 50.70 50.74 50.74 50.74
## [29,] 37.94 39.26 40.38 41.40 43.04 44.90 46.02 47.78 48.22 48.30 48.30 48.30
## [30,] 41.12 41.90 43.24 44.38 45.86 47.08 48.10 48.82 49.56 49.90 49.90 49.90
## [31,] 38.60 40.26 41.94 43.68 45.22 46.60 47.92 49.08 49.24 49.24 49.24 49.24
## [32,] 40.68 42.04 42.84 44.64 45.92 47.50 48.56 49.10 49.14 49.14 49.14 49.14
## [33,] 40.30 41.28 42.50 43.76 45.18 46.56 48.16 49.24 49.50 49.50 49.50 49.50
## [34,] 39.62 40.86 42.06 43.68 45.66 47.52 49.56 50.76 51.46 51.48 51.48 51.48
## [35,] 40.18 41.38 42.96 44.32 45.72 47.84 49.14 49.86 50.00 50.00 50.00 50.00
## [36,] 39.54 40.76 41.66 43.50 45.04 46.70 48.58 49.48 50.02 50.04 50.04 50.04
## [37,] 40.94 42.02 43.00 44.50 45.58 46.94 48.32 48.80 48.90 48.90 48.90 48.90
## [38,] 42.50 44.04 45.42 47.24 48.38 49.36 50.14 51.04 51.10 51.10 51.10 51.10
## [39,] 41.84 42.76 43.60 44.88 46.56 47.90 49.72 50.40 50.74 50.74 50.74 50.74
## [40,] 40.64 41.96 43.26 44.60 45.56 47.36 49.10 50.28 50.50 50.50 50.50 50.50
## [41,] 41.36 42.56 43.80 45.16 47.46 48.46 49.26 49.80 49.88 49.88 49.88 49.88
## [42,] 38.44 40.60 42.20 44.12 45.96 47.22 48.36 50.88 51.58 51.78 51.78 51.78
## [43,] 39.74 41.06 42.54 43.88 45.38 46.84 48.22 50.10 50.94 51.24 51.24 51.24
## [44,] 40.22 41.48 42.84 44.38 45.82 47.74 49.10 50.36 50.84 50.90 50.90 50.90
## [45,] 40.12 41.42 42.84 44.26 45.68 47.66 49.22 50.52 50.82 50.88 50.88 50.88
## [46,] 41.22 42.30 43.38 44.70 45.68 47.82 49.42 50.90 51.52 51.60 51.60 51.60
## [47,] 41.26 42.26 43.26 44.22 45.56 47.44 49.42 50.50 50.82 50.88 50.88 50.88
## [48,] 40.12 41.34 42.46 44.20 46.18 47.86 49.34 50.38 51.20 51.38 51.38 51.38
## [49,] 41.94 43.18 44.22 45.56 46.76 47.82 49.30 49.94 50.32 50.48 50.48 50.48
## [50,] 38.32 39.30 40.60 41.76 43.46 44.96 46.96 48.20 48.90 48.96 48.96 48.96
## [51,] 39.64 40.92 42.16 43.20 45.10 46.26 48.76 49.72 50.34 50.34 50.34 50.34
## [52,] 39.80 40.94 42.28 43.64 45.48 47.10 48.90 49.84 50.24 50.24 50.24 50.24
## [53,] 40.38 41.82 43.20 44.48 45.46 47.00 47.94 49.02 49.56 49.58 49.58 49.58
## [54,] 40.50 41.80 43.52 44.96 46.30 47.34 48.52 49.26 50.36 50.44 50.44 50.44
## [55,] 40.28 41.50 43.12 44.28 45.44 46.64 47.66 48.46 49.34 49.36 49.36 49.36
## [56,] 42.44 43.46 44.28 45.22 46.48 47.78 49.56 50.52 51.06 51.16 51.16 51.16
## [57,] 38.38 39.76 40.98 42.68 44.40 46.54 48.36 50.34 51.10 51.18 51.18 51.18
## [58,] 40.96 42.70 43.74 45.10 46.66 48.06 49.64 50.18 50.28 50.28 50.28 50.28
## [59,] 39.20 40.50 42.48 43.50 44.90 46.74 47.72 48.54 48.86 48.92 48.92 48.92
## [60,] 37.94 39.68 41.00 42.60 44.40 46.14 48.08 50.04 51.16 51.22 51.22 51.22
## [61,] 39.12 40.18 41.10 42.36 44.98 46.42 48.96 49.76 50.36 50.44 50.44 50.44
## [62,] 42.92 43.90 45.02 46.58 47.62 48.66 49.18 49.20 49.20 49.20 49.20 49.20
## [63,] 41.02 41.86 42.96 44.94 45.96 47.68 49.56 50.42 51.20 51.34 51.34 51.34
## [64,] 40.80 41.84 42.92 43.96 45.30 47.18 48.80 50.20 50.60 50.88 50.88 50.88
## [65,] 39.28 40.74 42.60 43.36 44.92 45.92 47.56 48.48 49.42 49.48 49.48 49.48

```

```

## [66,] 40.52 41.48 43.74 44.80 46.24 47.00 47.74 47.90 47.92 47.92 47.92 47.92
## [67,] 40.74 41.70 43.26 44.88 46.08 48.06 49.14 49.60 49.62 49.62 49.62 49.62
## [68,] 39.56 40.78 42.22 43.44 44.70 46.10 47.42 48.00 48.34 48.36 48.36 48.36
## [69,] 40.68 41.60 43.30 44.32 45.66 48.02 48.82 49.98 50.10 50.10 50.10 50.10
## [70,] 40.02 41.26 42.48 43.96 45.20 47.32 49.10 50.60 51.06 51.16 51.16 51.16
## [71,] 40.30 41.72 43.32 44.24 45.86 47.10 48.96 49.62 49.90 49.90 49.90 49.90
## [72,] 39.34 40.94 42.64 44.18 45.72 47.38 48.54 49.78 50.28 50.34 50.34 50.34
## [73,] 42.38 43.66 44.96 46.20 47.58 48.94 49.90 50.64 50.90 50.90 50.90 50.90
## [74,] 39.90 41.30 42.80 44.14 45.64 47.48 48.60 50.00 50.12 50.12 50.12 50.12
## [75,] 39.66 41.20 42.44 43.58 44.92 47.02 48.40 50.20 51.04 51.04 51.04 51.04
## [76,] 41.30 42.52 43.92 44.98 46.18 47.04 48.48 49.44 49.84 49.94 49.94 49.94
## [77,] 41.50 43.12 44.32 45.30 47.46 48.92 49.58 49.96 49.96 49.96 49.96 49.96
## [78,] 40.62 41.72 43.06 44.74 46.06 48.04 49.94 50.90 51.42 51.54 51.54 51.54
## [79,] 41.36 42.94 44.66 45.72 46.96 48.18 48.88 49.68 49.72 49.72 49.72 49.72
## [80,] 41.06 42.00 42.94 43.76 45.38 47.30 49.44 50.66 51.22 51.30 51.30 51.30
## [81,] 41.60 43.04 44.62 46.00 47.90 48.50 49.78 50.22 50.32 50.32 50.32 50.32
## [82,] 41.82 42.82 44.14 45.62 46.98 48.10 49.46 51.32 51.58 51.60 51.60 51.60
## [83,] 39.26 40.58 41.98 42.98 43.96 45.06 46.54 47.70 48.44 48.56 48.56 48.56
## [84,] 39.20 40.30 41.46 42.84 43.82 45.12 45.94 46.84 47.10 47.20 47.20 47.20
## [85,] 40.02 41.80 43.44 44.68 45.64 47.28 48.54 49.68 49.84 49.88 49.88 49.88
## [86,] 41.34 42.66 44.26 45.20 47.22 48.38 49.34 49.60 49.62 49.62 49.62 49.62
## [87,] 41.06 42.18 43.38 44.54 46.16 47.58 49.54 50.08 50.16 50.16 50.16 50.16
## [88,] 39.62 40.74 41.94 43.56 44.90 46.90 48.94 50.54 51.34 51.74 51.74 51.74
## [89,] 43.02 43.96 45.62 46.46 47.62 48.90 50.00 50.72 50.96 50.96 50.96 50.96
## [90,] 42.00 43.04 44.00 45.12 46.72 47.92 49.64 50.74 51.16 51.24 51.24 51.24
## [91,] 40.54 41.62 42.70 43.88 45.08 47.38 48.96 50.60 51.10 51.14 51.14 51.14
## [92,] 38.06 39.68 41.28 42.74 44.26 45.74 47.20 49.06 49.32 49.46 49.46 49.46
## [93,] 38.40 39.70 40.88 42.28 43.96 44.98 47.04 47.90 48.60 48.64 48.64 48.64
## [94,] 40.08 41.56 42.82 44.16 45.56 47.44 48.84 50.84 51.02 51.06 51.06 51.06
## [95,] 40.88 42.02 43.26 44.68 46.14 48.24 49.58 50.84 51.12 51.16 51.16 51.16
## [96,] 39.74 41.62 42.50 44.24 45.58 46.68 48.00 50.16 51.16 51.32 51.34 51.34
## [97,] 38.70 40.32 41.96 43.84 45.64 47.30 48.94 50.36 51.46 51.62 51.62 51.62
## [98,] 41.56 42.78 43.48 44.38 45.84 47.46 48.94 50.44 51.26 51.52 51.52 51.52
## [99,] 39.46 40.86 42.58 44.32 45.86 47.66 49.44 50.50 51.02 51.06 51.06 51.06
## [100,] 41.08 41.92 43.18 44.24 45.66 47.94 49.54 50.82 51.26 51.32 51.32 51.32
## [101,] 38.44 39.74 41.20 43.00 44.66 46.78 48.48 50.34 50.98 51.18 51.18 51.18
## [102,] 39.20 40.38 41.56 43.42 45.22 46.84 48.48 49.72 50.42 50.46 50.46 50.46
## [103,] 40.70 41.78 43.00 43.66 44.90 46.14 48.30 49.26 50.24 50.26 50.26 50.26
## [104,] 39.54 40.60 41.88 42.94 44.34 46.18 48.40 49.62 50.50 50.52 50.52 50.52
## [105,] 40.58 41.62 43.00 44.16 45.76 47.38 48.64 49.52 49.72 49.72 49.72 49.72
## [106,] 40.44 41.60 43.24 44.40 45.80 47.04 48.28 49.16 49.78 49.80 49.80 49.80
## [107,] 39.56 40.40 41.78 43.08 44.60 46.30 48.06 49.50 50.82 50.86 50.86 50.86
## [108,] 39.50 40.72 42.16 43.40 44.84 46.10 47.50 48.44 48.86 48.94 48.94 48.94
##      [,97] [,98] [,99] [,100]
## [1,] 41.06 41.06 41.06 41.06
## [2,] 51.14 51.14 51.14 51.14
## [3,] 51.34 51.34 51.34 51.34
## [4,] 49.24 49.24 49.24 49.24
## [5,] 49.28 49.28 49.28 49.28
## [6,] 50.44 50.44 50.44 50.44
## [7,] 49.34 49.34 49.34 49.34
## [8,] 50.26 50.26 50.26 50.26
## [9,] 50.66 50.66 50.66 50.66
## [10,] 49.76 49.76 49.76 49.76

```



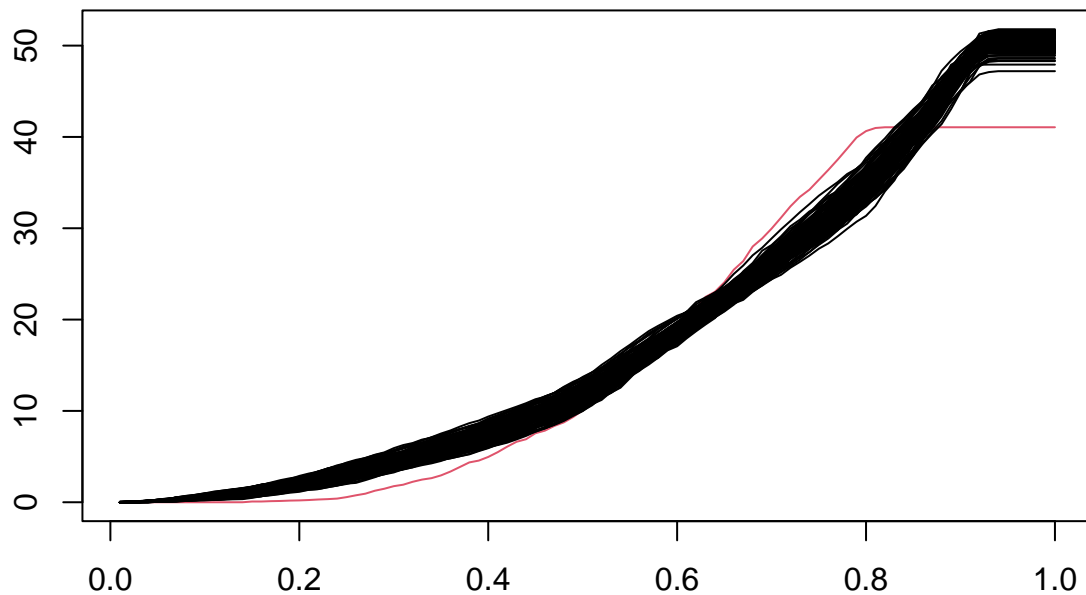
```

## [11,] 50.22 50.22 50.22 50.22
## [12,] 49.58 49.58 49.58 49.58
## [13,] 50.12 50.12 50.12 50.12
## [14,] 50.22 50.22 50.22 50.22
## [15,] 50.36 50.36 50.36 50.36
## [16,] 49.60 49.60 49.60 49.60
## [17,] 49.22 49.22 49.22 49.22
## [18,] 50.00 50.00 50.00 50.00
## [19,] 50.88 50.88 50.88 50.88
## [20,] 49.86 49.86 49.86 49.86
## [21,] 50.16 50.16 50.16 50.16
## [22,] 50.44 50.44 50.44 50.44
## [23,] 49.38 49.38 49.38 49.38
## [24,] 51.60 51.60 51.60 51.60
## [25,] 50.74 50.74 50.74 50.74
## [26,] 50.92 50.92 50.92 50.92
## [27,] 50.18 50.18 50.18 50.18
## [28,] 50.74 50.74 50.74 50.74
## [29,] 48.30 48.30 48.30 48.30
## [30,] 49.90 49.90 49.90 49.90
## [31,] 49.24 49.24 49.24 49.24
## [32,] 49.14 49.14 49.14 49.14
## [33,] 49.50 49.50 49.50 49.50
## [34,] 51.48 51.48 51.48 51.48
## [35,] 50.00 50.00 50.00 50.00
## [36,] 50.04 50.04 50.04 50.04
## [37,] 48.90 48.90 48.90 48.90
## [38,] 51.10 51.10 51.10 51.10
## [39,] 50.74 50.74 50.74 50.74
## [40,] 50.50 50.50 50.50 50.50
## [41,] 49.88 49.88 49.88 49.88
## [42,] 51.78 51.78 51.78 51.78
## [43,] 51.24 51.24 51.24 51.24
## [44,] 50.90 50.90 50.90 50.90
## [45,] 50.88 50.88 50.88 50.88
## [46,] 51.60 51.60 51.60 51.60
## [47,] 50.88 50.88 50.88 50.88
## [48,] 51.38 51.38 51.38 51.38
## [49,] 50.48 50.48 50.48 50.48
## [50,] 48.96 48.96 48.96 48.96
## [51,] 50.34 50.34 50.34 50.34
## [52,] 50.24 50.24 50.24 50.24
## [53,] 49.58 49.58 49.58 49.58
## [54,] 50.44 50.44 50.44 50.44
## [55,] 49.36 49.36 49.36 49.36
## [56,] 51.16 51.16 51.16 51.16
## [57,] 51.18 51.18 51.18 51.18
## [58,] 50.28 50.28 50.28 50.28
## [59,] 48.92 48.92 48.92 48.92
## [60,] 51.22 51.22 51.22 51.22
## [61,] 50.44 50.44 50.44 50.44
## [62,] 49.20 49.20 49.20 49.20
## [63,] 51.34 51.34 51.34 51.34
## [64,] 50.88 50.88 50.88 50.88

```

```
## [65,] 49.48 49.48 49.48 49.48
## [66,] 47.92 47.92 47.92 47.92
## [67,] 49.62 49.62 49.62 49.62
## [68,] 48.36 48.36 48.36 48.36
## [69,] 50.10 50.10 50.10 50.10
## [70,] 51.16 51.16 51.16 51.16
## [71,] 49.90 49.90 49.90 49.90
## [72,] 50.34 50.34 50.34 50.34
## [73,] 50.90 50.90 50.90 50.90
## [74,] 50.12 50.12 50.12 50.12
## [75,] 51.04 51.04 51.04 51.04
## [76,] 49.94 49.94 49.94 49.94
## [77,] 49.96 49.96 49.96 49.96
## [78,] 51.54 51.54 51.54 51.54
## [79,] 49.72 49.72 49.72 49.72
## [80,] 51.30 51.30 51.30 51.30
## [81,] 50.32 50.32 50.32 50.32
## [82,] 51.60 51.60 51.60 51.60
## [83,] 48.56 48.56 48.56 48.56
## [84,] 47.20 47.20 47.20 47.20
## [85,] 49.88 49.88 49.88 49.88
## [86,] 49.62 49.62 49.62 49.62
## [87,] 50.16 50.16 50.16 50.16
## [88,] 51.74 51.74 51.74 51.74
## [89,] 50.96 50.96 50.96 50.96
## [90,] 51.24 51.24 51.24 51.24
## [91,] 51.14 51.14 51.14 51.14
## [92,] 49.46 49.46 49.46 49.46
## [93,] 48.64 48.64 48.64 48.64
## [94,] 51.06 51.06 51.06 51.06
## [95,] 51.16 51.16 51.16 51.16
## [96,] 51.34 51.34 51.34 51.34
## [97,] 51.62 51.62 51.62 51.62
## [98,] 51.52 51.52 51.52 51.52
## [99,] 51.06 51.06 51.06 51.06
## [100,] 51.32 51.32 51.32 51.32
## [101,] 51.18 51.18 51.18 51.18
## [102,] 50.46 50.46 50.46 50.46
## [103,] 50.26 50.26 50.26 50.26
## [104,] 50.52 50.52 50.52 50.52
## [105,] 49.72 49.72 49.72 49.72
## [106,] 49.80 49.80 49.80 49.80
## [107,] 50.86 50.86 50.86 50.86
## [108,] 48.94 48.94 48.94 48.94
```

```
plot.dqf(c.dqf$dqf2,labels=show(length(c.outlier[,1]),1:1))
```



## DQF Figures

```
draw.cone <- function(data,idx1,idx2,min,max){
  m <- (data[idx1,2]-data[idx2,2])/(data[idx1,1]-data[idx2,1])
  b <- data[idx1,2] - m*data[idx1,1]

  x <- seq(min,max,.01)
  y <- m*x + b

  lines(x,y)

  # draw mid line

  mid.x <- (data[idx1,1]+data[idx2,1])/2
  mid.y <- (data[idx1,2]+data[idx2,2])/2

  mid.b <- mid.y - (-1/m)*mid.x

  ymids <- (-1/m)*x+mid.b

  lines(x,ymids,lty=2)

  # draw cones
  m.cone1 <- tan(atan(m)+pi/4)
  m.cone2 <- tan(atan(m)-pi/4)
```

```

b.cone1 <- mid.y - (m.cone1)*mid.x
b.cone2 <- mid.y - (m.cone2)*mid.x

if(m.cone1 < 0) x.cone1 <- seq(min,mid.x,.01)
else x.cone1 <- seq(mid.x,max,.01)

if(m.cone2 < 0) x.cone2 <- seq(min,mid.x,.01)
else x.cone2 <- seq(mid.x,max,.01)

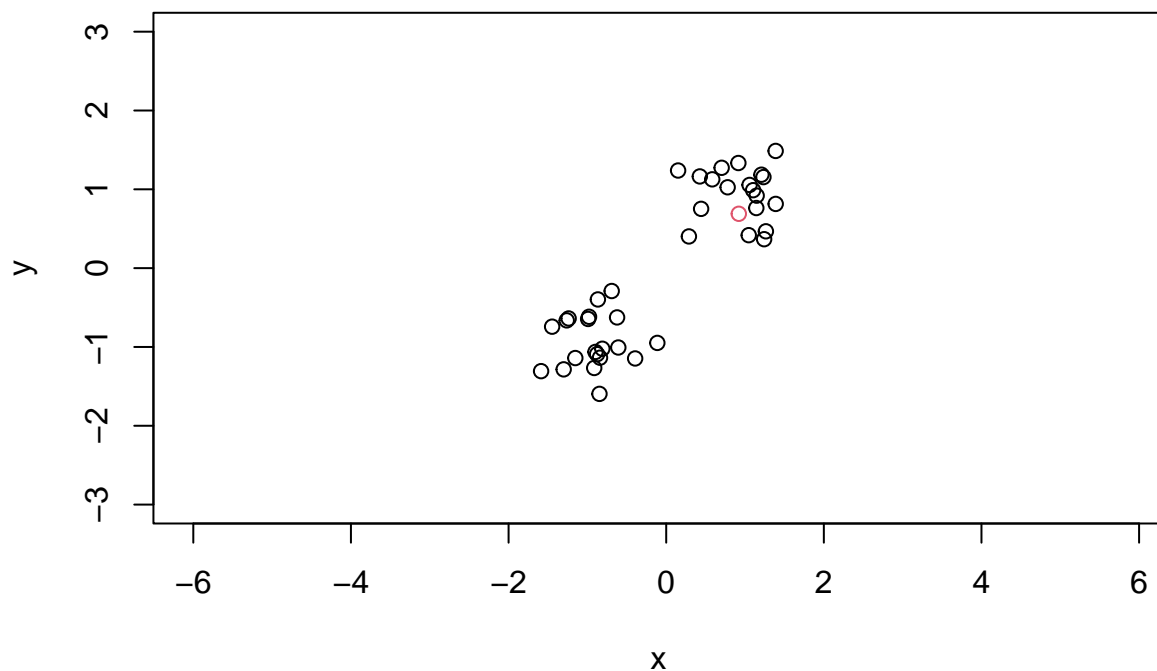
y.cone1 <- m.cone1*x.cone1 + b.cone1
y.cone2 <- m.cone2*x.cone2 + b.cone2
lines(x.cone1,y.cone1,col='red')
lines(x.cone2,y.cone2,col='red')
}

```

```

set.seed(47)
x <- c(rnorm(20),rnorm(20,5))
y <- c(rnorm(20),rnorm(20,5))
df <- data.frame(x,y)
df <- scale(df)
plot(df,asp=1,ylim=c(-3,3),col=show(length(df[,1]),25))

```

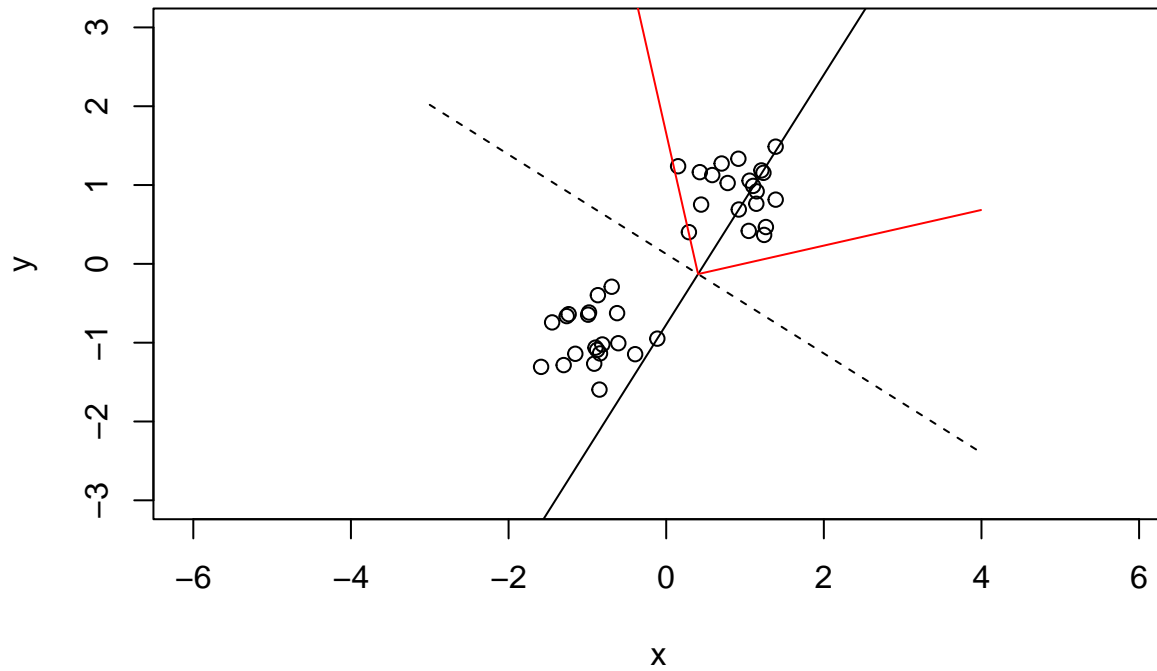


```

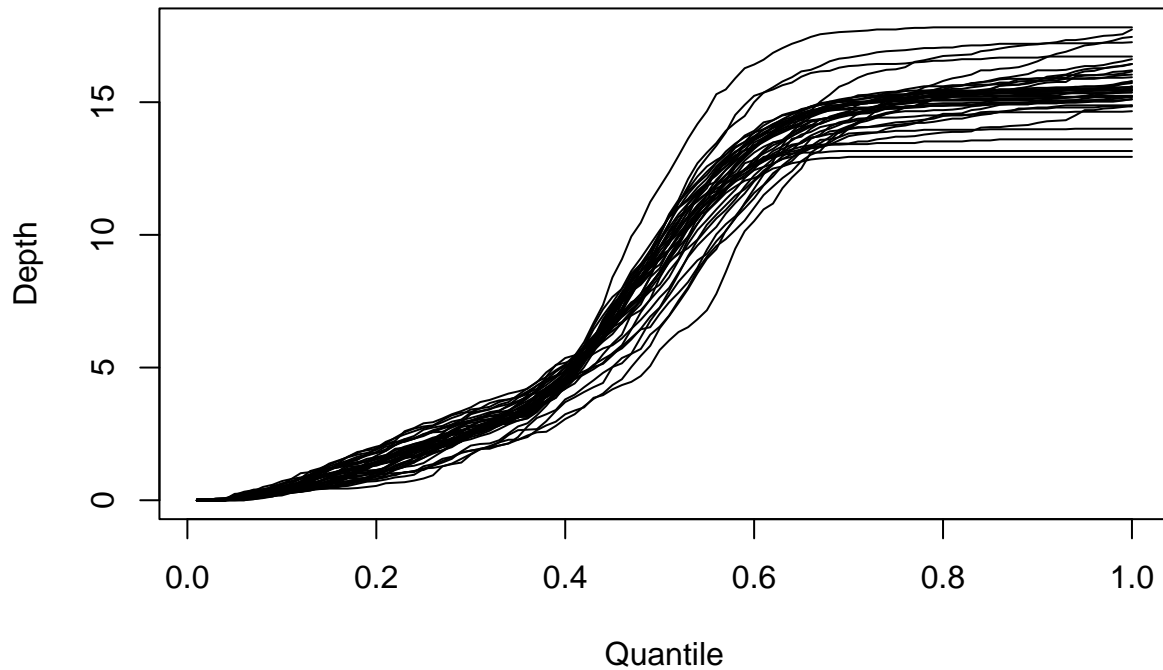
set.seed(47)
x <- c(rnorm(20),rnorm(20,5))
y <- c(rnorm(20),rnorm(20,5))
df <- data.frame(x,y)

```

```
df <- scale(df)
plot(df,asp=1,ylim=c(-3,3))
draw.cone(df,1,25,min=-3,max=4)
```



```
fig <- dqf.outlier(df)
plot.dqf(fig$dqf2,xlab='Quantile',ylab='Depth')
```



```
draw.depths <- function(data,idx1,idx2,min,max){
  m <- (data[idx1,2]-data[idx2,2])/(data[idx1,1]-data[idx2,1])
  b <- data[idx1,2] - m*data[idx1,1]

  x <- seq(min,max,.01)
  y <- m*x + b

  # draw mid line
  mid.x <- (data[idx1,1]+data[idx2,1])/2
  mid.y <- (data[idx1,2]+data[idx2,2])/2
  mid.b <- mid.y - (-1/m)*mid.x
  ymids <- (-1/m)*x+mid.b

  x.dqf1 <- seq(min,mid.x,length.out=40)
  num <- 50
  for(pt.x in x.dqf1){

    pt.y <- m*pt.x+b

    m.cone1 <- tan(atan(m)+pi/4)
    m.cone2 <- tan(atan(m)-pi/4)

    b.cone1 <- pt.y - (m.cone1)*pt.x
    b.cone2 <- pt.y - (m.cone2)*pt.x

    x.cone1 <- seq(min,pt.x,length.out=25)
```

```

x.cone2 <- seq(pt.x,max,length.out=25)

y.cone1 <- m.cone1*x.cone1 + b.cone1
y.cone2 <- m.cone2*x.cone2 + b.cone2

name <- paste(3.7,num,sep='')
num <- num+1
jpeg(paste(name,'.jpg',sep=''))
plot(df,asp=1,ylim=c(-3,3))
lines(x,y)
lines(x,ymids,lty=2)
lines(x.cone1,y.cone1,col='red')
lines(x.cone2,y.cone2,col='red')
dev.off()
}
}

draw.depths2 <- function(data,idx1,idx2,min,max){
  m <- (data[idx1,2]-data[idx2,2])/(data[idx1,1]-data[idx2,1])
  b <- data[idx1,2] - m*data[idx1,1]

  x <- seq(min,max,.01)
  y <- m*x + b

  # draw mid line
  mid.x <- (data[idx1,1]+data[idx2,1])/2
  mid.y <- (data[idx1,2]+data[idx2,2])/2
  mid.b <- mid.y - (-1/m)*mid.x
  ymids <- (-1/m)*x+mid.b

  x.dqf1 <- seq(mid.x,max,length.out=40)
  num <- 10
  for(pt.x in x.dqf1){

    pt.y <- m*pt.x+b

    m.cone1 <- tan(atan(m)+pi/4)
    m.cone2 <- tan(atan(m)-pi/4)

    b.cone1 <- pt.y - (m.cone1)*pt.x
    b.cone2 <- pt.y - (m.cone2)*pt.x

    x.cone1 <- seq(pt.x,max,length.out=25)

    x.cone2 <- seq(min,pt.x,length.out=25)

    y.cone1 <- m.cone1*x.cone1 + b.cone1
    y.cone2 <- m.cone2*x.cone2 + b.cone2

    name <- paste(3.7,num,sep='')
    num <- num+1
    jpeg(paste(name,'.jpg',sep=''))
    plot(df,asp=1,ylim=c(-3,3))
  }
}

```

```

    lines(x,y)
    lines(x,ymids,lty=2)
    lines(x.cone1,y.cone1,col='red')
    lines(x.cone2,y.cone2,col='red')
    dev.off()
  }
}

```

```

name <- paste(3.7,10,sep=' ')
name

```

```
## [1] "3.710"
```

```

name <- paste("hello",sep=',',1)
jpeg(paste(name,".jpg",sep=' '))
plot(df)
dev.off()

```

```
## pdf
## 2
```

```
draw.depths(df,1,25,min=-4,max=4)
```

```
draw.depths2(df,1,25,min=-4,max=4)
```

```
tan(-pi/4)
```

```
## [1] -1
```

```
tan(atan(-0.1544025)-pi/4)
```

```
## [1] -1.365191
```

## Try to break Euclidean space

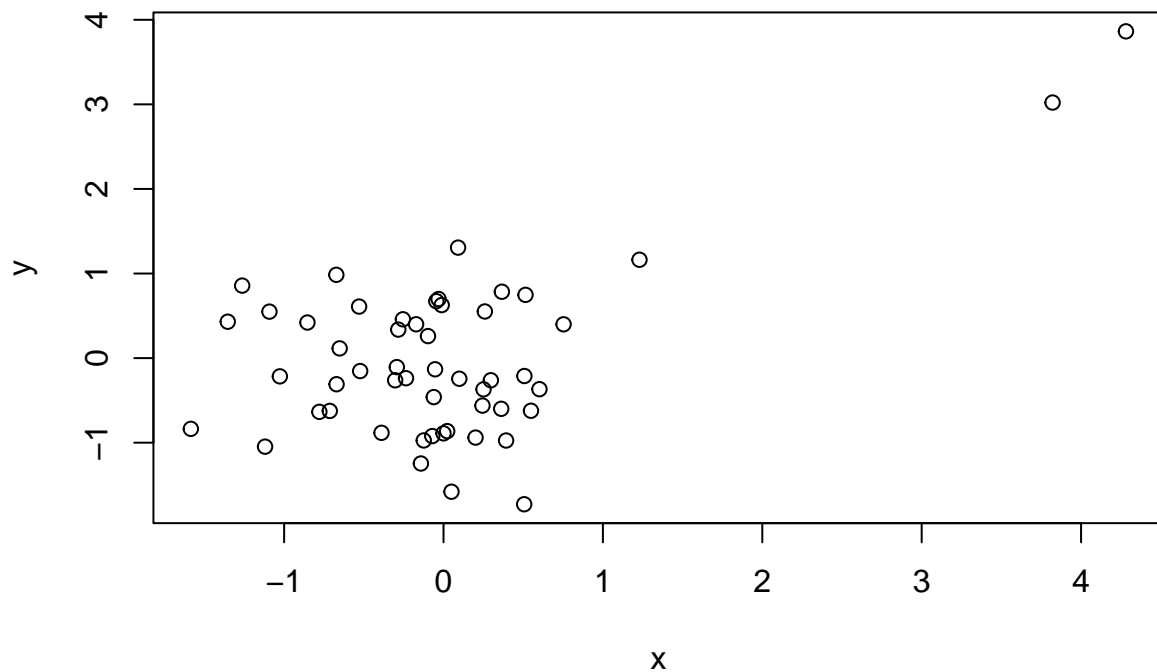
```

set.seed(47)
x <- c(rnorm(50),rnorm(2,5))
y <- c(rnorm(50),rnorm(2,5))
df <- data.frame(x,y)
df <- scale(df)

plot(df)

```





```
clus.rate <- function(clus){
  count <- length(which(clus[1:50]==2))
  count <- count + length(which(clus[51:52]==1))
  if(count>52/2) return(count)
  else return(52-count)
}

km <- kmeans(df,2)
cluster <- km$cluster
cluster

## [1] 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
## [39] 1 1 1 1 1 1 1 1 1 1 1 1 2 2

clus.rate(cluster)

## [1] 52

set.seed(47)
x <- c(rnorm(50),rnorm(2,5))
y <- c(rnorm(50),rnorm(2,5))
df <- data.frame(x,y)
df <- scale(df)

for(i in 1:50){
  df <- cbind(df,rnorm(52))
}
```

```

df <- scale(df)

set.seed(47)

df1 <- scale(df)
for(i in 1:1){
  df1 <- cbind(df1,rnorm(52))
}
df1 <- scale(df1)

df3 <- scale(df)
for(i in 1:3){
  df3 <- cbind(df3,rnorm(52))
}
df3 <- scale(df3)

df6 <- scale(df)
for(i in 1:6){
  df6 <- cbind(df6,rnorm(52))
}
df6 <- scale(df6)

df10 <- scale(df)
for(i in 1:10){
  df10 <- cbind(df10,rnorm(52))
}
df10 <- scale(df10)

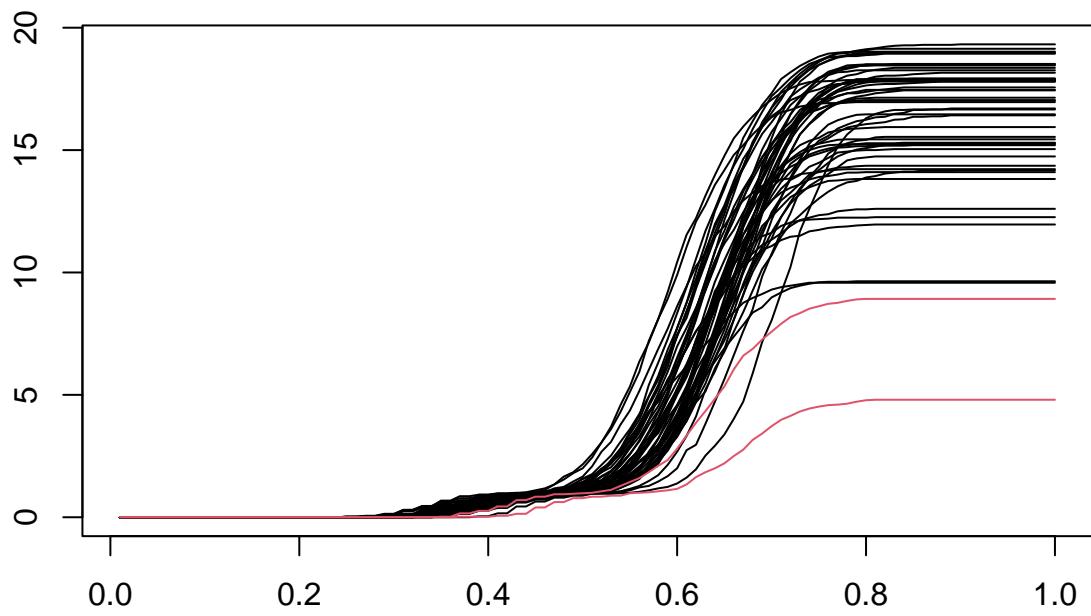
df20 <- scale(df)
for(i in 1:20){
  df20 <- cbind(df20,rnorm(52))
}
df20 <- scale(df20)

df50 <- scale(df)
for(i in 1:50){
  df50 <- cbind(df50,rnorm(52))
}
df50 <- scale(df50)

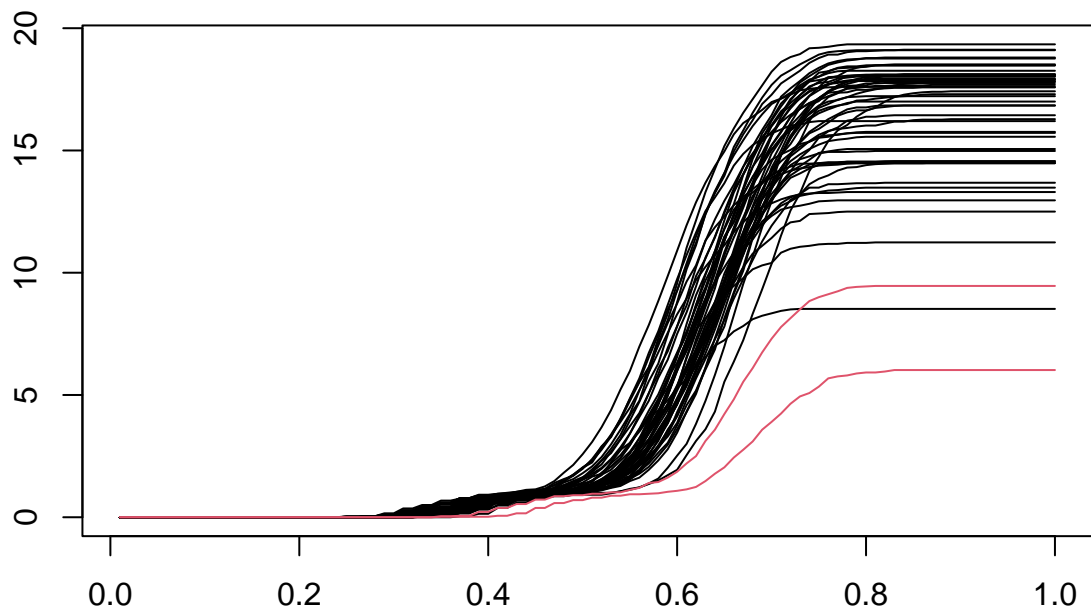
test1 <- dqf.outlier(df1,g.scale = 10)
test3 <- dqf.outlier(df3,g.scale = 10)
test6 <- dqf.outlier(df6,g.scale = 10)
test10 <- dqf.outlier(df10,g.scale = 10)
test20 <- dqf.outlier(df20,g.scale = 10)
test50 <- dqf.outlier(df50,g.scale = 10)

plot.dqf(test1$dqf2,labels=show(52,51:52))

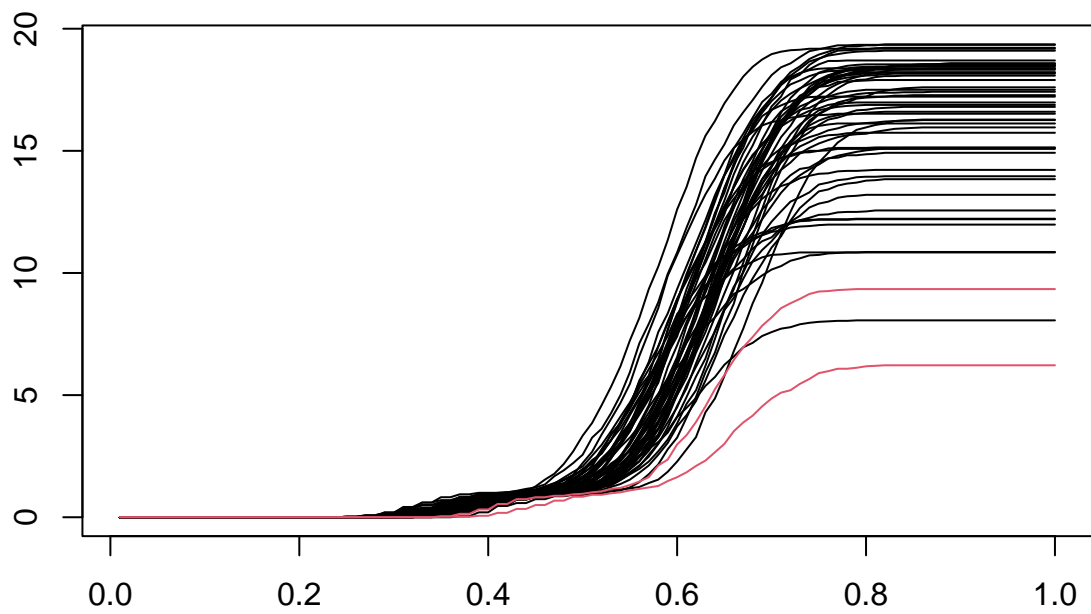
```



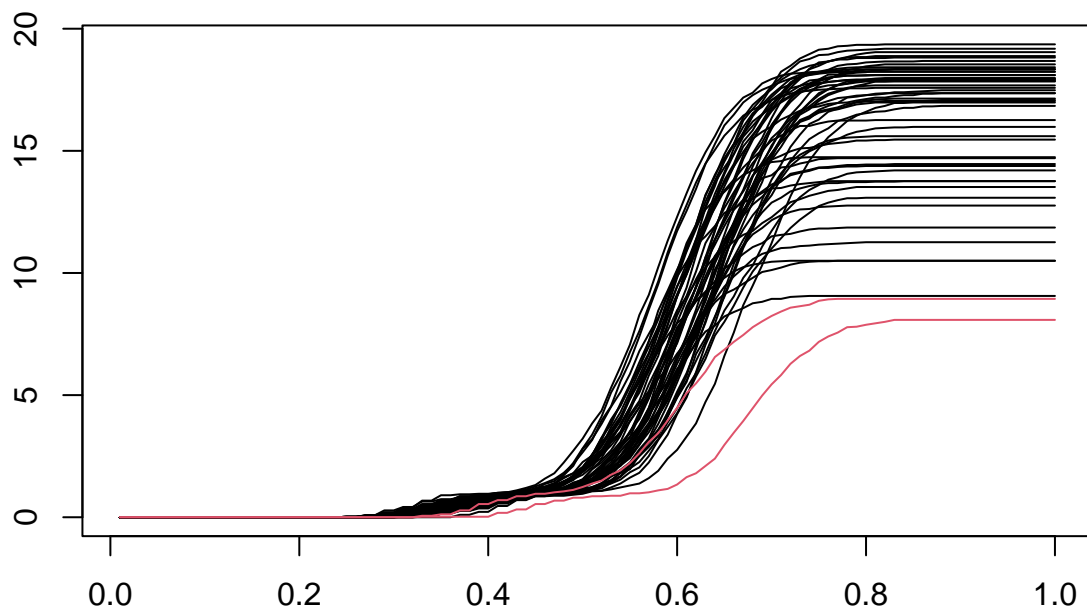
```
plot.dqf(test3$dqf2, labels=show(52, 51:52))
```



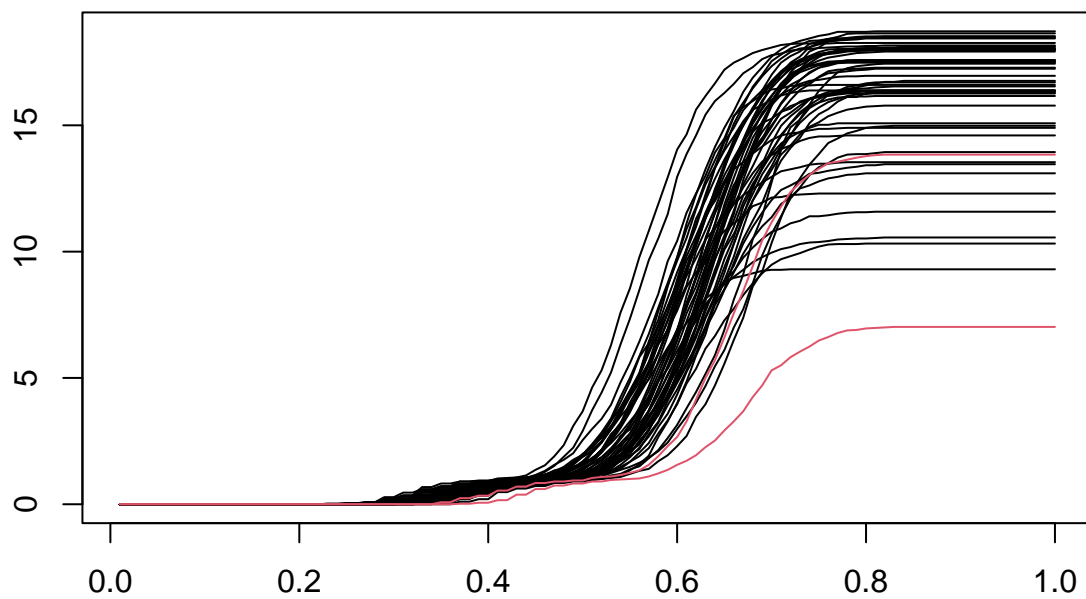
```
plot.dqf(test6$dqf2,labels=show(52,51:52))
```



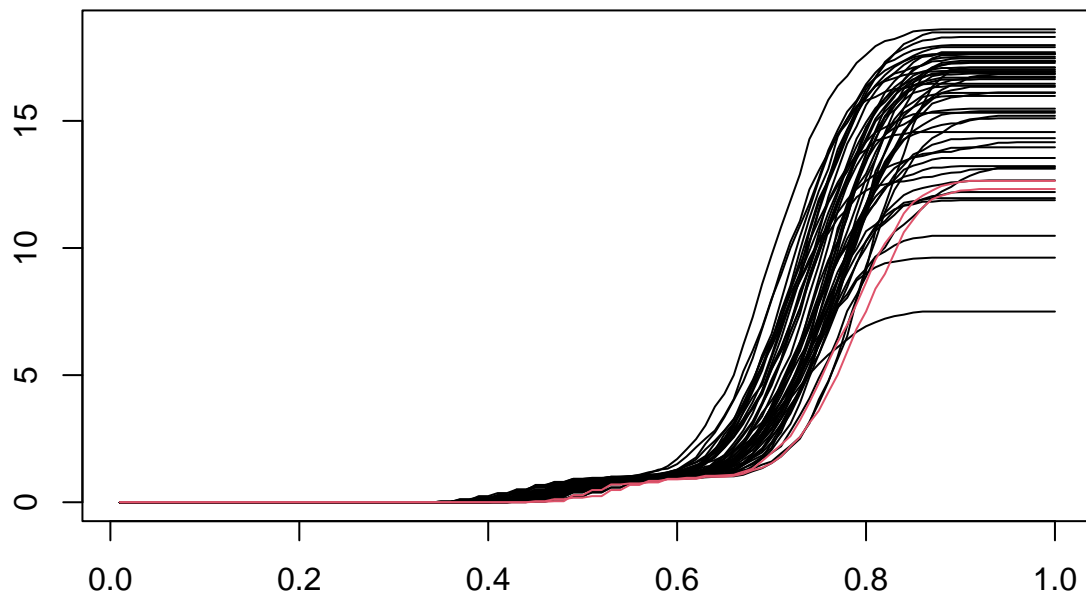
```
plot.dqf(test10$dqf2, labels=show(52, 51:52))
```



```
plot.dqf(test20$dqf2, labels=show(52, 51:52))
```



```
plot.dqf(test50$dqf2, labels=show(52, 51:52))
```



```

par(mfrow=c(2,3))

variability <- c(1,3,6,10,20,50)

set.seed(47)
x <- c(rnorm(50),rnorm(2,5))
y <- c(rnorm(50),rnorm(2,5))
df <- data.frame(x,y)
df <- scale(df)
df.hd <- scale(df)

for(v in variability){

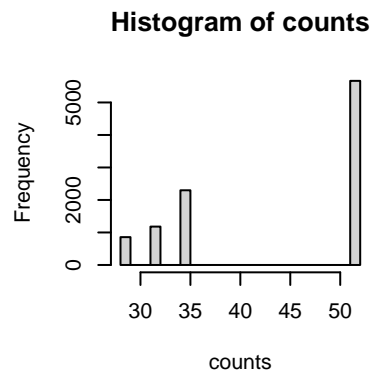
  df.hd <- scale(df)
  for(i in 1:v){
    df.hd <- cbind(df.hd,rnorm(52))
  }
  df.hd <- scale(df.hd)

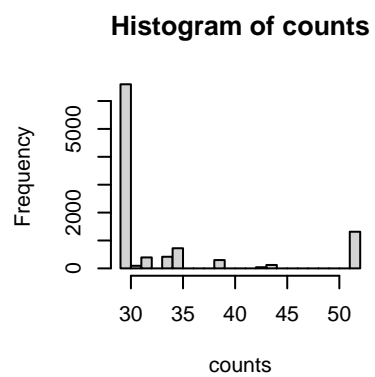
  km <- kmeans(df.hd,2)
  counts <- c(clus.rate(km$cluster))
  for(i in 1:10000){
    km <- kmeans(df.hd,2)
    counts <- c(counts,clus.rate(km$cluster))
  }
}

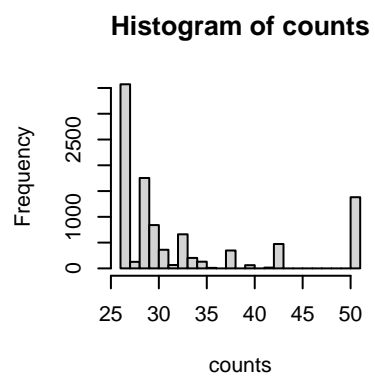
```

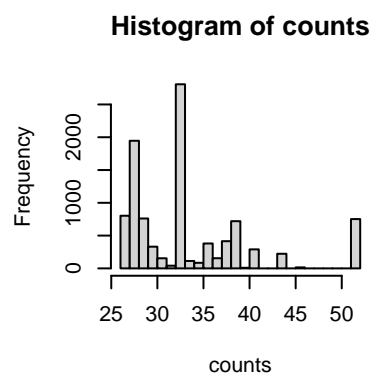


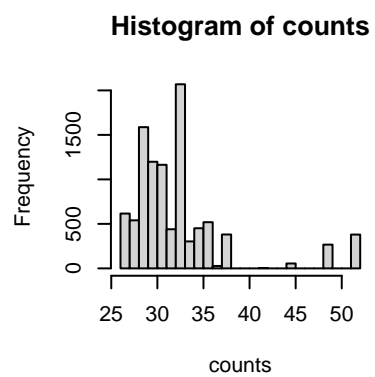
```
par(mfrow = c(2,3))  
hist(counts,breaks=26)  
}
```

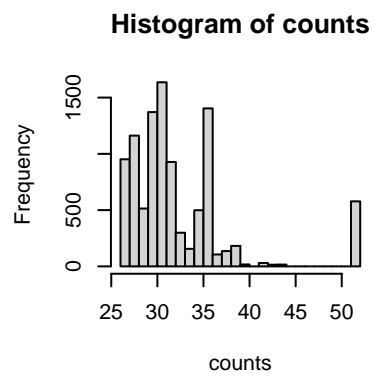








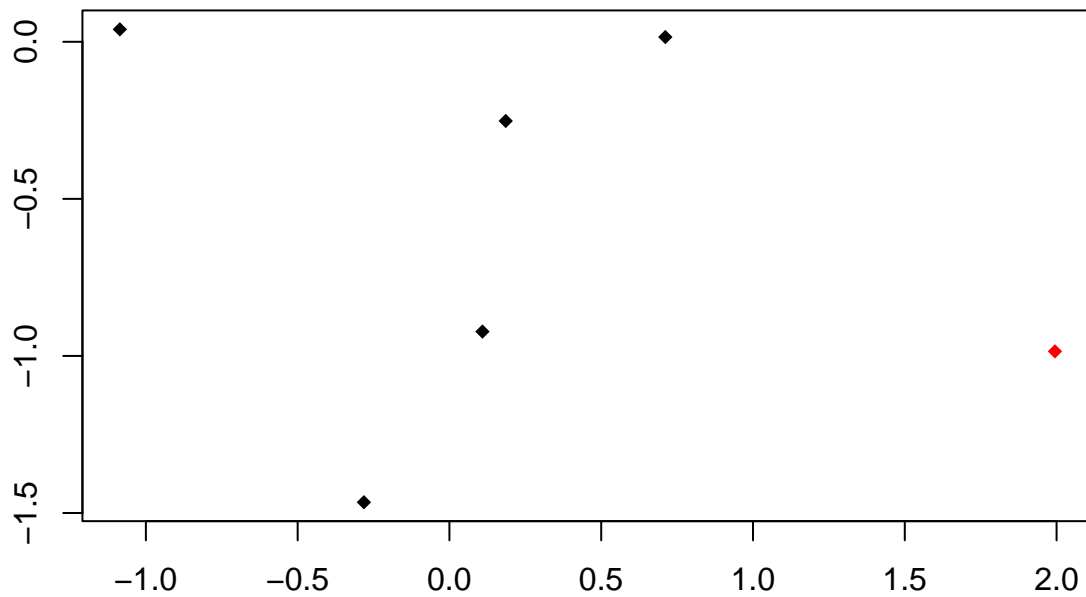




## Depth, regular

```
set.seed(47)
x <- rnorm(6,0,1)
y <- rnorm(6,0,1)
x.line <- seq(-2,2,.1)
df <- data.frame(x,y)
df <- df[order(y),]

labels <- c('black','black','black','black','black','black')
labels[2] <- 'red'
plot(df,xlab="",ylab="",pch=18,col=labels)
```



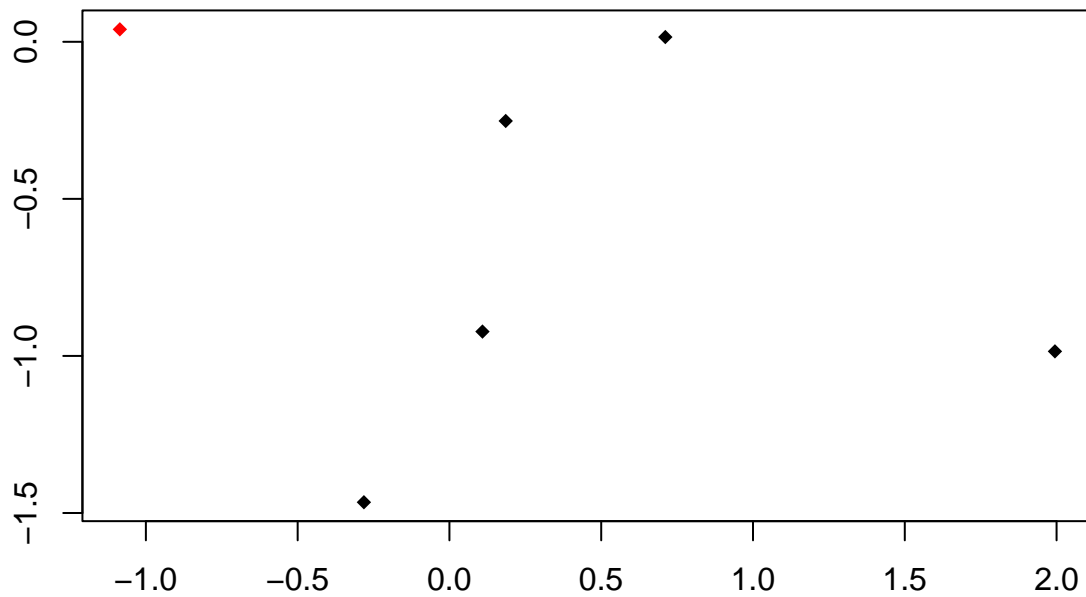
```
draw.line <- function(x,y,m){
  xs <- seq(-2,2,.01)
  b <- y-m*x
  y <- m*xs+b
  lines(xs,y)
}
```

```
set.seed(47)
x <- rnorm(6,0,1)
y <- rnorm(6,0,1)
df <- data.frame(x,y)
df <- df[order(y),]
temp <- df[2,]
df[2,] <- df[3,]
df[3,] <- temp

x.line <- seq(-2,2,.1)

labels <- c('black','black','black','black','black','black')
labels[6] <- 'red'

plot(df,xlab="",ylab="",col=labels,pch=18)
```



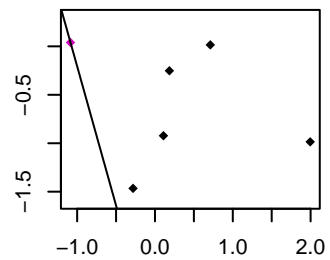
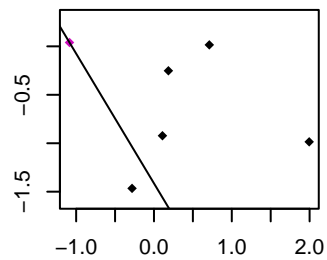
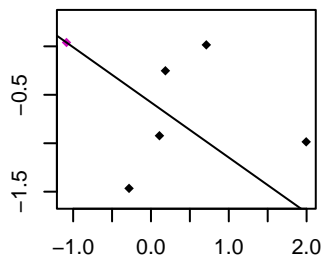
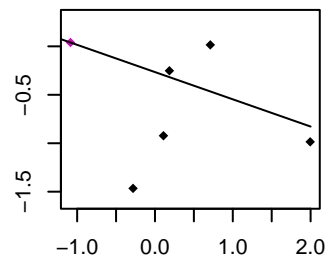
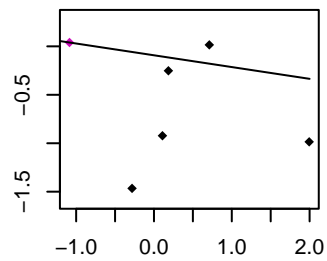
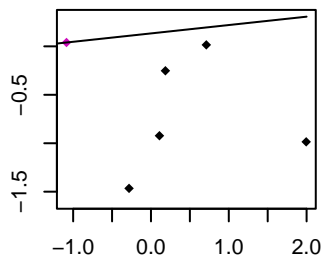
```

m <- c((df$y[6]-df$y[5])/(df$x[6]-df$x[5]))
for(i in 4:1){
  m <- c(m,(df$y[6]-df$y[i])/(df$x[6]-df$x[i]))
}

ms <- c(m[1]+.1)
for(i in 1:4){
  ms <- c(ms,(m[i]+m[i+1])/2)
}
ms <- c(ms,m[5]-1)
par(mfrow=c(2,3))
for(m in ms){
  plot(df,ylim=c(-1.6,.3),pch=18,col=c(1,1,1,1,1,6),xlab="",ylab="")
  draw.line(df$x[6],df$y[6],m)
}

```



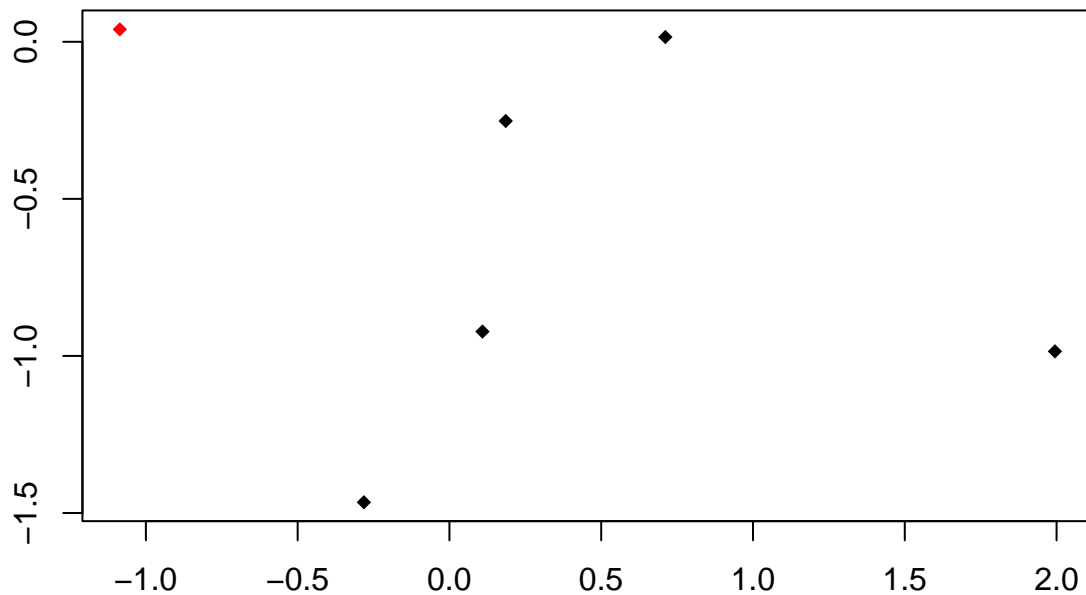


```
set.seed(47)
x <- rnorm(6,0,1)
y <- rnorm(6,0,1)
df <- data.frame(x,y)
df <- df[order(y),]
temp <- df[2,]
df[2,] <- df[3,]
df[3,] <- temp

x.line <- seq(-2,2,.1)

labels <- c('black','black','black','black','black','black')
labels[6] <- 'red'

plot(df,xlab="",ylab="",col=labels,pch=18)
```



```

m <- c((df$y[4]-df$y[6])/(df$x[4]-df$x[6]))
for(i in c(5,3:1)){
  m <- c(m,(df$y[4]-df$y[i])/(df$x[4]-df$x[i]))
}

m <- m[order(m)]
m

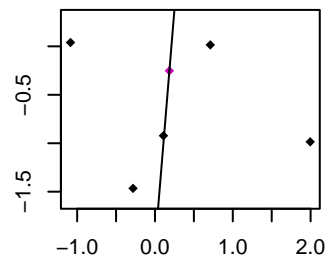
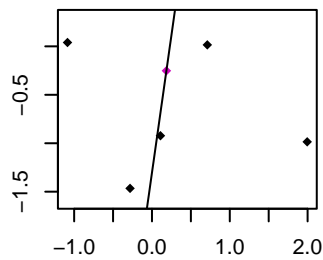
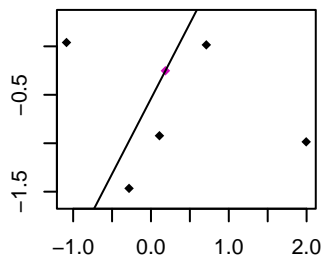
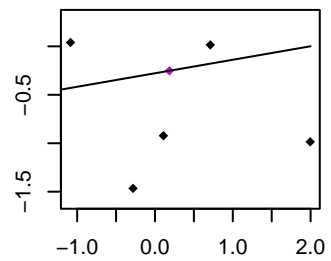
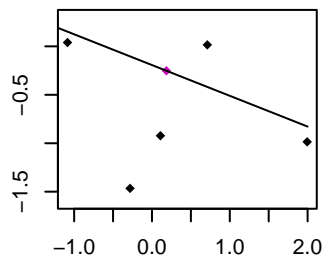
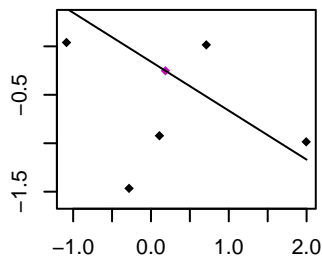
## [1] -0.4053722 -0.2294379  0.5081945  2.5979914  8.7486968

ms <- c(m[1]-.1)
for(i in 1:4){
  ms <- c(ms,(m[i]+m[i+1])/2)
}
ms <- c(ms,m[5]+1)
ms

## [1] -0.5053722 -0.3174050  0.1393783  1.5530929  5.6733441  9.7486968

par(mfrow=c(2,3))
for(m in ms){
  plot(df,ylim=c(-1.6,.3),pch=18,col=c(1,1,1,6,1,1),xlab="",ylab="")
  draw.line(df$x[4],df$y[4],m)
}

```



```
draw.seperator <- function(x1,y1,x2,y2){
  x <- seq(-2,2,.01)
  y <- ((y2-y1)/(x2-x1))*(x-x1)+y1
  lines(x,y)
}
```

```
set.seed(47)
x <- rnorm(6,0,1)
y <- rnorm(6,0,1)
x.line <- seq(-2,2,.1)
for(j in 1:length(x)){
  labels <- c('black','black','black','black','black','black')
  labels[j] = 'red'
  par(mfrow=c(2,3))
  for(i in 1:length(x)){
    plot(x,y,xlab="",ylab="",col=labels,pch=18)
    draw.seperator(x[i],y[i],x[j],y[j])
  }
}
```

