Question 3:

> #creating the group

> group_of_1998 <- c(0,0,0,0,0,3,5,5,5,8,9,10,12,14,14,14,17,20,20,23,25,33,37,38,43,45,51,67,76,95)

> group_of_2003 <-
c(0,1,1,4,5,5,6,9,10,10,11,12,13,14,14,15,16,17,19,19,20,20,20,20,20,22,31,88,127,138)

a)

> #median

> median(group_of_1998)

[1] 14

> median(group_of_2003)

[1] 14.5

> #quantile

> quantile(group_of_1998)

  0% 25% 50% 75% 100%

   0   5   14   36   95

> quantile(group_of_2003)

   0%   25%   50%   75% 100%

  0.00 9.25 14.50 20.00 138.00

b)

> #mean

> mean(group_of_1998)

[1] 22.96667

> mean(group_of_2003)

[1] 23.56667

> #standard deviation

> sd(group_of_1998)

[1] 24.31614

> sd(group_of_2003)

[1] 33.4269

c)

Since the standard deviation of the 1998 group is smaller than the standard deviation of the 2003 group. So we say that the 1998 group provides better quality of components.

d)

> #skewness

> skewness(group_of_1998)

[1] 1.361945

It mean the distribution of components of the 1998 group is skewed to the right.

> skewness(group_of_2003)

[1] 2.624467

It mean the distribution of components of the 2003 group is skewed to the right.

e)

> #Minimum and Maximum for 1998 group

> min(group_of_1998)

[1] 0

> max(group_of_1998)

[1] 95

> #Minimum and Maximum for 2003 group

> min(group_of_2003)

[1] 0

> max(group_of_2003)

[1] 138

Box Plot:

> #boxplot of group_of_1998

> boxplot(group_of_1998,

+   main = "BoxPlot: 1998",
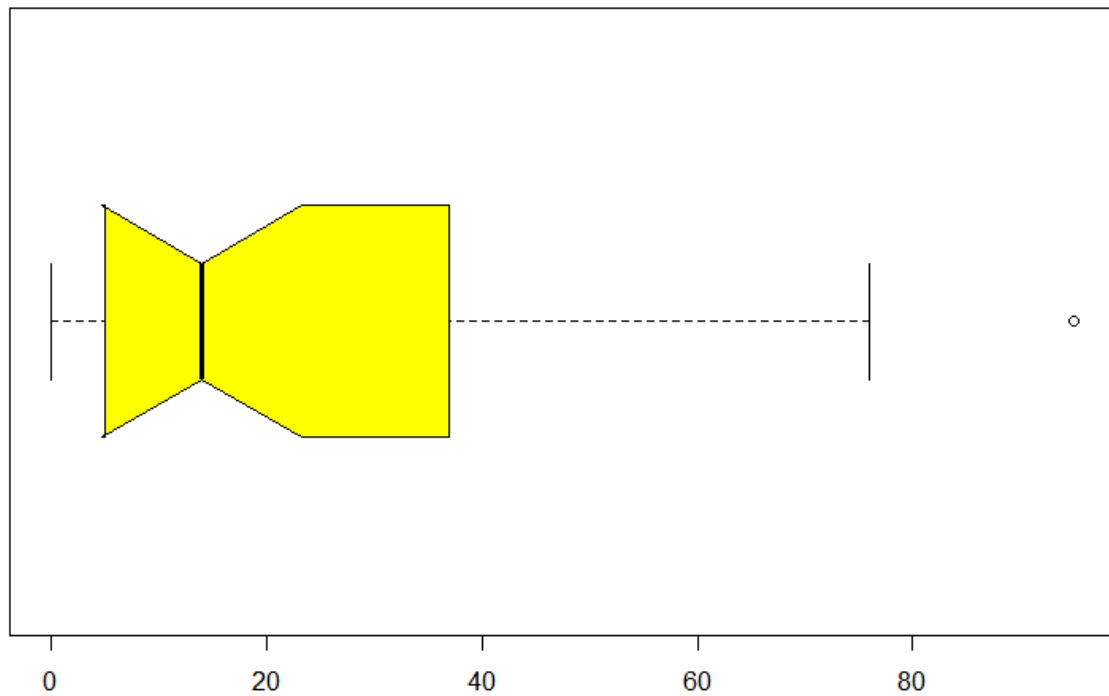
+   col = "yellow",

+   border = "black",

```
+       horizontal = TRUE,

+       notch = TRUE

+     )
```

BoxPlot: 1998


```
> #boxplot of group_of_2003

> boxplot(group_of_2003,

+       main = "BoxPlot: 2003",

+       col = "yellow",

+       border = "black",

+       horizontal = TRUE,

+       notch = TRUE

+     )
```

BoxPlot: 2003