```
> #匯入資料
> data<-data.frame(read.csv("customers.txt"))
> #1
> data[5,1]
[1] 45
> #2
> data2<-unique(data) #remove the repeated data to get the fifth lowest age
> data2
    age
1    49
2    69
3    41
4    73
5    45
6    71
7    50
8    43
9    70
10   32
11   47
12   77
13   64
19   62
22   72
24   63
25   21
28   48
29   35
35   29
36   42
38   85
44   68
48   79
53   30
54   76
55   31
57   74
65   83
```

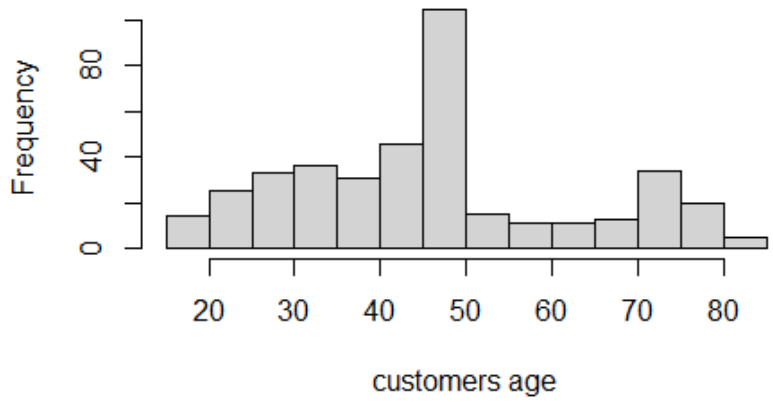
```
67  75
86  36
89  24
93  22
94  60
95  59
97  51
98  46
100 34
103 37
110 26
112 54
123 53
132 44
138 25
139 38
141 78
145 57
146 28
155 19
157 52
159 39
162 82
163 33
172 40
182 23
185 20
191 27
194 56
268 65
284 55
286 58
299 81
306 80
307 66
320 67
377 18
> data2<-sort(data2[1:399,1]) #sort the data by increasing order
```

```
> data2
  [1] 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37
 [21] 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57
 [41] 58 59 60 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78
 [61] 79 80 81 82 83 85
> data2[5]
[1] 22
#3
> data3<-sort(data[1:399,1]) #so
> data3[1:5]
[1] 18 19 19 19 19
> #4
> data4<-unique(data) #remove the repeated value
> data4<-sort(data[1:399,1], decreasing = TRUE) #sort the data by increasing order
> data4[1:5]
[1] 85 83 82 81 80
> #5
> mean<-mean(data[1:399,1])
> mean
[1] 46.80702
> #6
> sd<-sd(data[1:399,1])
> sd
[1] 16.3698
> #7
> age_diff<-data[1:399,1]-mean
> age_diff
   [1]    2.1929825   22.1929825   -5.8070175   26.1929825
   [5]   -1.8070175   24.1929825    3.1929825   -3.8070175
   [9]   23.1929825  -14.8070175    0.1929825   30.1929825
  [13]   17.1929825    3.1929825    3.1929825   -1.8070175
  [17]    2.1929825    0.1929825   15.1929825    3.1929825
  [21]    0.1929825   25.1929825    0.1929825   16.1929825
  [25]  -25.8070175    2.1929825    3.1929825    1.1929825
  [29]  -11.8070175   30.1929825    1.1929825    1.1929825
  [33]    3.1929825    0.1929825  -17.8070175   -4.8070175
  [37]   -4.8070175   38.1929825   -1.8070175    2.1929825
  [41]   -1.8070175   -3.8070175    2.1929825   21.1929825
```

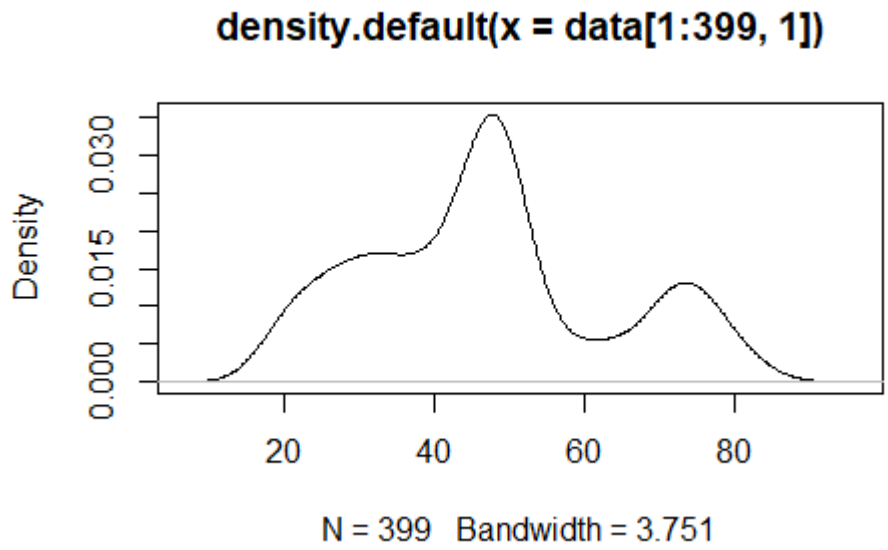
```
 [45]  -4.8070175   1.1929825  25.1929825  32.1929825
 [49]   1.1929825   3.1929825   0.1929825  -1.8070175
 [53] -16.8070175  29.1929825 -15.8070175   2.1929825
 [57]  27.1929825  25.1929825   1.1929825   2.1929825
 [61]  26.1929825   3.1929825   0.1929825   0.1929825
 [65]  36.1929825  25.1929825  28.1929825   3.1929825
 [69]   3.1929825   2.1929825   1.1929825  -1.8070175
 [73]   2.1929825   2.1929825   2.1929825  25.1929825
 [77]   3.1929825  28.1929825  27.1929825  25.1929825
 [81]  27.1929825  29.1929825   2.1929825   3.1929825
 [85]  29.1929825 -10.8070175  -1.8070175 -11.8070175
 [89] -22.8070175  -1.8070175   3.1929825  -4.8070175
 [93] -24.8070175  13.1929825  12.1929825  -1.8070175
 [97]   4.1929825  -0.8070175   0.1929825 -12.8070175
[101]  16.1929825  24.1929825  -9.8070175 -25.8070175
[105]  -3.8070175 -14.8070175   0.1929825 -11.8070175
[109]  23.1929825 -20.8070175  16.1929825   7.1929825
[113]  -1.8070175   0.1929825 -20.8070175 -11.8070175
[117] -24.8070175 -15.8070175  23.1929825   4.1929825
[121]  -9.8070175  -5.8070175   6.1929825 -12.8070175
[125]  -1.8070175 -12.8070175  -3.8070175   3.1929825
[129] -17.8070175   2.1929825  -0.8070175  -2.8070175
[133] -20.8070175   2.1929825   1.1929825 -20.8070175
[137] -12.8070175 -21.8070175  -8.8070175 -21.8070175
[141]  31.1929825  -1.8070175 -15.8070175   0.1929825
[145]  10.1929825 -18.8070175  28.1929825   2.1929825
[149] -20.8070175   2.1929825 -12.8070175 -21.8070175
[153]   2.1929825 -12.8070175 -27.8070175 -14.8070175
[157]   5.1929825  26.1929825  -7.8070175 -15.8070175
[161]   1.1929825  35.1929825 -13.8070175 -16.8070175
[165]  -9.8070175 -13.8070175   0.1929825 -17.8070175
[169]   0.1929825  -9.8070175 -17.8070175  -6.8070175
[173]  15.1929825   1.1929825 -10.8070175  -5.8070175
[177]  10.1929825  10.1929825 -12.8070175 -21.8070175
[181]  31.1929825 -23.8070175 -14.8070175  -5.8070175
[185] -26.8070175  26.1929825   2.1929825   3.1929825
[189]  -0.8070175   3.1929825 -19.8070175  -1.8070175
[193] -17.8070175   9.1929825  28.1929825   6.1929825
```

```
[197]    0.1929825   -7.8070175   31.1929825   -3.8070175
[201]   -1.8070175    5.1929825    1.1929825  -10.8070175
[205]   31.1929825    0.1929825  -23.8070175  -12.8070175
[209]    2.1929825  -21.8070175   -0.8070175   -6.8070175
[213]    3.1929825   -9.8070175    4.1929825  -11.8070175
[217]   -1.8070175    2.1929825  -25.8070175   -9.8070175
[221]   -4.8070175   10.1929825    2.1929825   -6.8070175
[225]    0.1929825    2.1929825    5.1929825   -4.8070175
[229]    1.1929825  -18.8070175  -13.8070175    2.1929825
[233]    6.1929825  -25.8070175   -8.8070175  -26.8070175
[237]  -14.8070175   30.1929825   -1.8070175    2.1929825
[241]  -25.8070175    1.1929825    3.1929825   15.1929825
[245]   -7.8070175   -1.8070175   -2.8070175   -0.8070175
[249]   28.1929825   -4.8070175   -0.8070175    3.1929825
[253]   23.1929825   -9.8070175   -8.8070175   -0.8070175
[257]  -14.8070175   -2.8070175    3.1929825  -16.8070175
[261]   -7.8070175   -8.8070175  -19.8070175  -27.8070175
[265]    2.1929825  -27.8070175   -6.8070175   18.1929825
[269]  -19.8070175    3.1929825    1.1929825   -8.8070175
[273]   -2.8070175   23.1929825   17.1929825   25.1929825
[277]    2.1929825  -14.8070175    2.1929825    2.1929825
[281]   26.1929825  -16.8070175  -16.8070175    8.1929825
[285]   -4.8070175   11.1929825   32.1929825  -18.8070175
[289]  -13.8070175  -20.8070175  -10.8070175  -15.8070175
[293]   26.1929825  -15.8070175   24.1929825   21.1929825
[297]    3.1929825  -21.8070175   34.1929825  -22.8070175
[301]    3.1929825  -25.8070175  -23.8070175    4.1929825
[305]   15.1929825   33.1929825   19.1929825  -17.8070175
[309]  -16.8070175   -6.8070175  -27.8070175   24.1929825
[313]   32.1929825   30.1929825  -14.8070175   -6.8070175
[317]    2.1929825  -20.8070175    2.1929825   20.1929825
[321]    9.1929825  -22.8070175    0.1929825  -18.8070175
[325]   11.1929825   -1.8070175  -27.8070175   25.1929825
[329]  -12.8070175   -0.8070175  -27.8070175  -13.8070175
[333]   33.1929825  -16.8070175   26.1929825  -26.8070175
[337]  -27.8070175   -6.8070175   29.1929825    1.1929825
[341]   -8.8070175   29.1929825   29.1929825   -9.8070175
[345]  -11.8070175  -20.8070175  -21.8070175   20.1929825
```

```
[349] -15.8070175 -19.8070175 -10.8070175 -25.8070175
[353] -18.8070175  -7.8070175   2.1929825  -1.8070175
[357]  13.1929825   1.1929825  -1.8070175   0.1929825
[361] -19.8070175  32.1929825  -1.8070175   4.1929825
[365] -23.8070175  27.1929825 -15.8070175 -26.8070175
[369]   3.1929825 -16.8070175  35.1929825  23.1929825
[373]  -3.8070175 -26.8070175   3.1929825   1.1929825
[377] -28.8070175  -1.8070175  15.1929825  -5.8070175
[381]  24.1929825 -27.8070175  26.1929825 -20.8070175
[385]  28.1929825  -5.8070175  -0.8070175   2.1929825
[389]   2.1929825 -23.8070175  27.1929825   6.1929825
[393] -23.8070175   4.1929825  24.1929825   3.1929825
[397]   3.1929825  20.1929825  27.1929825
> #8
> mean(age_diff)
[1] -1.623275e-15
> #9-1
> hist(data[1:399,1], main=NULL,xlab="customers age")
```




```
> #9-2
> d <- density(data[1:399,1]) # returns the density data
> plot(d) # plots the results
```




```
> #9-3
> boxplot(data[1:399,1],horizontal = TRUE) #draw the boxplot of customer ages
> stripchart(data[1:399,1], method = "stack", add = TRUE) #add a stripchart on it
```