> #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

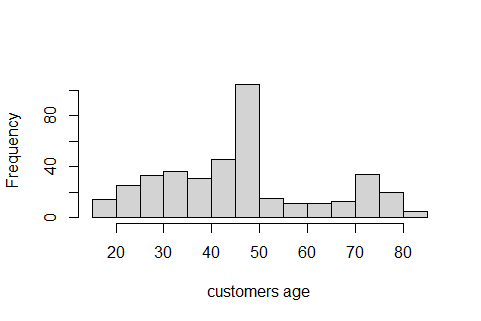
> #8

> mean(age\_diff)

[1] -1.623275e-15

> #9-1

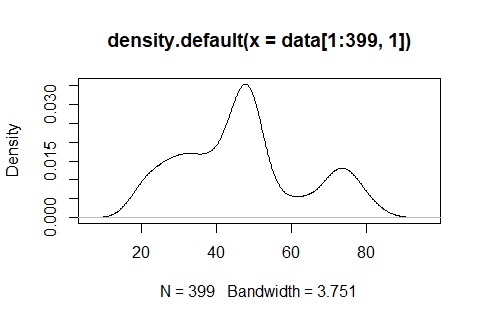
> hist(data[1:399,1], main=NULL,xlab="customers age")



> #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

