Solution of Assignment 1

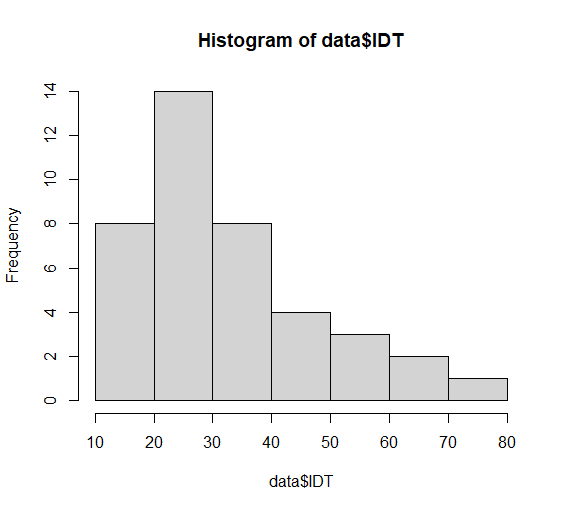
1. For the Ex 1-13 on p24, answer to the following questions by using R.

테이블이(가) 표시된 사진

자동 생성된 설명

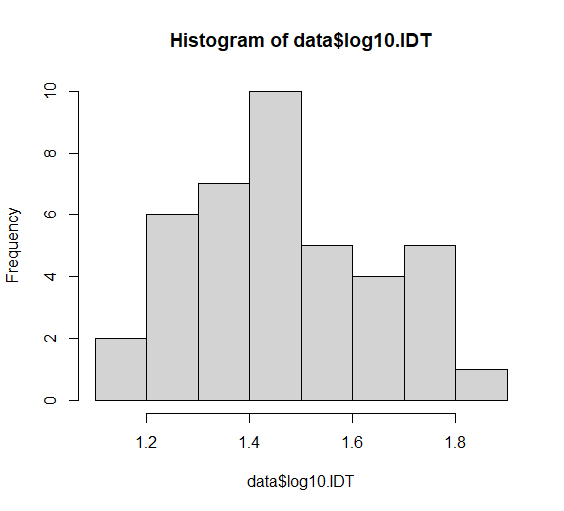
a) Use class intervals 10-<20, 20-<30, to construct a histogram of the original data (IDT).

> hist(data$IDT, breaks=seq(10,80,10))



b) Use intervals 1.1-<1.2, 1.2-<1.3, to do the same for the transformed data.

> hist(data$log10.IDT, breaks=seq(1.1,1.9,0.1))



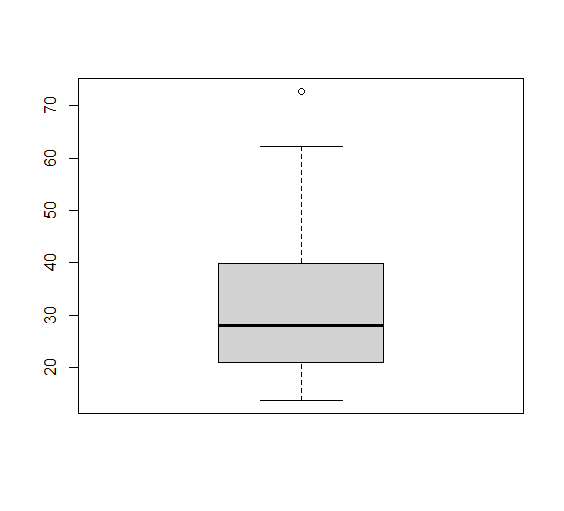
c) Draw the stem and leaf graph for log10.IDT variable

텍스트이(가) 표시된 사진

자동 생성된 설명

d) Draw the box plot for IDT variable.

> boxplot(data$IDT)



2, a)

Sample mean : =

Sample variance : =

Sample standard deviation :

Sort :

87 87 93 99 103 105 119 129 130 132 138 145 145 152 153 160 180 195 211

Number of data : 19

Median : 10th number : 132

b) :

sample mean :

sample variance :

sample standard devation :

3.

a.)=)+)-=0.2+0.25-0.11=0.34

b.P()=1-)=1-0.34=0.66

c. )=

=0.2+0.25+0.25-0.11-0.05-0.07+0.01=0.48

d.=1-)=1-0.48=0.52

e.

=0.25-0.05-0.07+0.01=0.14

f.

=0.66+0.05+0.07-0.01=0.77

4.

a. What is the probability that the next customer will request plus gas and fill the tank ()

45\*0.3=0.135

35\*0.6=0.21

2\*0.4=0.08

So, the probability that the next customer will request plus gas and fill the tank is 0.21.

b. What is the probability that the next customer fills the tank?

P(B)=

c. If the next customer fills the tank, what is the probability that regular gas is requested? Plus? Premium?

the probability that regular gas is requested= = 0.135/0.425= 0.3176

the probability that plus gas is requested= = 0.21/0.425= 0.4941

the probability that premium gas is requested= = 0.08/0.425= 0.1882

5.

Let’s suppose that an event that a purchaser purchases basic model is event B, that a purchaser purchases deluxe model is event D and that a purchaser purchases an extended warranty, event W.

Probability that the purchaser bought basic model= *=0.4*

Probability that the purchaser bought deluxe model*= =1- =1-0.4=0.6*

Probability that a purchaser who bought a basic model purchased an extended warranty is ,

and for a case if the purchaser bought deluxe, .

The probability that someone randomly selected purchased basic model when he or she has an extended warranty is

The answer is 0.2857.

6.

Subsystem A : 

Subsystem B : 

P(Subsystem A works) =

P(Subsystem B works) =

P(System works) = 1 – P(Subsystem A fails) P(Subsystem B fails)

=

7.

Let be the event that the first component function and be the event that the second component function

P()=?

P()=0.8

P()=0.65

P()=0.96

P()=0.96 = P(+P(- P(= P(+0.8-0.65 P(=0.81.

Therefore, =