# Statistics Lab Report

M.Nagarjuna-[17MIS7162]
Fundamental Statistics-
[L17+L18]
Prof.Tanuj Kumar

## TABLE OF CONTENTS

## LAB 1

### PROGRAM 1.1

```
x <- c(2,5,3,7,1,9,6)

print(length(x))

print(x[length(x)])

print(min(x))

print(max(x))
```

**OUTPUT:**

```
> x <- c(2,5,3,7,1,9,6)
> print(length(x))
[1] 7
> print(x[length(x)])
[1] 6
> print(min(x))
[1] 1
> print(max(x))
[1] 9
```

### PROGRAM 1.2

```
x <- c(1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20)

print(x[3])

print(x[3:5])

y <- c(2,5,6,12)

print(x[y])

print(rev(x))
```

**OUTPUT:**

```
x <- c(1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20)
> print(x[3])
[1] 3
> print(x[3:5])
[1] 3 4 5
```

```
> y <- c(2,5,6,12)
> print(x[y])
[1]  2  5  6 12
> print(rev(x))
 [1] 20 19 18 17 16 15 14 13 12 11 10  9  8  7  6  5  4  3
 2  1
```

PROGRAM 1.3

```
x <- rep(c(4,3,5),times=c(4,3,3))

print(x)

y <- rep(c(4,6,3),times = 10)

print(y)

z <-
rep(c(c(3,1,5,3,2,3,4,5),c(7),c(6,5,4,3,2,1,34,21,54)),times=c(1,
6,1))

print(z)

a <- c(2, 1, 3, 4)

b <- c(5,7,12,6,-8)

c <- append(a,b)

print(c)

d <- length(c)

if(d==11){

print("lenght of augmented array is 11")

}else{

print("lenght of augmented array is not 11")

}
```

**OUTPUT:**

```
> x <- rep(c(4,3,5),times=c(4,3,3))
> print(x)
 [1] 4 4 4 4 3 3 3 5 5 5
> y <- rep(c(4,6,3),times = 10)
> print(y)
 [1] 4 6 3 4 6 3 4 6 3 4 6 3 4 6 3 4 6 3 4 6 3 4 6 3 4 6 3
4 6 3
> z <- rep(c(c(3,1,5,3,2,3,4,5),c(7),c(6,5,4,3,2,1,34,21,54
)),times=c(1,6,1))
Error in rep(c(c(3, 1, 5, 3, 2, 3, 4, 5), c(7), c(6, 5, 4,
3, 2, 1, 34,  :
  invalid 'times' argument
> print(z)
Error in print(z) : object 'z' not found
> a <- c(2, 1, 3, 4)
> b <- c(5,7,12,6,-8)
> c <- append(a,b)
> print(c)
[1]  2  1  3  4  5  7 12  6 -8
> d <- length(c)
> if(d==11){
+ print("lenght of augmented array is 11")
+ }else{
+ print("lenght of augmented array is not 11")
+ }
[1] "lenght of augmented array is not 11"
```

PROGRAM 1.4

```
for(i in seq(3,7,by = 0.5)){

b <- c(b,i)

}

print(b)
```

**OUTPUT:**

```
> for(i in seq(3,7,by = 0.5)){
+ b <- c(b,i)
+ }
> print(b)
 [1]  5.0  7.0 12.0  6.0 -8.0  3.0  3.5  4.0  4.5  5.0  5.5
  6.0  6.5  7.0
```

## LAB 2

### PROGRAM 2.1

```
x = c(1,2,3,4,5,6,7,8,9,10)

y = sum(x)

print(y)

z = mean(x)

print(z)

a = median(x)

print(a)

b = sum(x^2)

print(b)

c = sum((1/10)*abs((x-z)))

print(c)

d = sum(c^2)

print(d)

if(c <= d){

print("Mean Deviation is lesser than Standard Deviation")

}

else{

print("Mean Deviation is greater than Standard Deviation")

}
```

**OUTPUT:**

```
> x = c(1,2,3,4,5,6,7,8,9,10)
> y = sum(x)
> print(y)
```

```
[1] 55
> z = mean(x)
> print(z)
[1] 5.5
> a = median(x)
> print(a)
[1] 5.5
> b = sum(x^2)
> print(b)
[1] 385
> c = sum((1/10)*abs((x-z)))
> print(c)
[1] 2.5
> d = sum(c^2)
> print(d)
[1] 6.25
> if(c <= d){
+ print("Mean Deviation is lesser than Standard Deviation")
+ }
[1] "Mean Deviation is lesser than Standard Deviation"
> else{
> print("Mean Deviation is greater than Standard Deviation"
)
[1] "Mean Deviation is greater than Standard Deviation"
```

## PROGRAM 2.2

```
data <- data.frame(

SNO <- c(1:20),

Price <- c(52,52,52,52,52,52,52,52,52,52,52,52,52,52,52,52,52,52,52,52),

FloorArea <-
c(1225,1230,1200,1000,1420,1450,1360,1510,1400,1550,1720,1700,1660
,1800,1830,1790,2010,2000,2100,2240),

Rooms <- c(3,3,3,2,4,3,4,4,5,6,6,5,6,7,6,6,6,6,8,7),

Age <- c(6,7,4,4,1,5,6,9,0.5,5,7,4,6,0.7,5,2,6,3,5,3),

CentralHeating <-
c('YES','NO','NO','NO','YES','YES','NO','NO','NO','NO','YES','NO','YES','
YES','YES','NO','YES','NO','YES','YES'),

stringsAsFactors = FALSE)

print(data)
```

```
print(summary(data))

a = nrow(data)

b = ncol(data)

print(a)

print(b)

dim(data)

c = names(data)

print(c)

data[1:5,]

data[16:20,]

data[1:5,1:3]

r = c(1,3,6,10)

c = c(2,4,5)

data[r,c]

data[3]

data[,3]
```

**OUTPUT:**

```
> data <- data.frame(
+ SNO <- c(1:20),
+ Price <- c(52,52,52,52,52,52,52,52,52,52,52,52,52,52,52,52,5
2,52,52,52,52),
+ FloorArea <- c(1225,1230,1200,1000,1420,1450,1360,1510,14
00,1550,1720,1700,1660,1800,1830,1790,2010,2000,2100,2240),
+ Rooms <- c(3,3,3,2,4,3,4,4,5,6,6,5,6,7,6,6,6,6,8,7),
+ Age <- c(6,7,4,4,1,5,6,9,0.5,5,7,4,6,0.7,5,2,6,3,5,3),
+ CentralHeating <- c('YES','NO','NO','NO','YES','YES','NO'
,'NO','NO','NO','YES','NO','YES','YES','YES','NO','YES','NO
','YES','YES'),
+ stringsAsFactors = FALSE)
> data <- data.frame(
+ SNO <- c(1:20),
+ Price <- c(52,52,52,52,52,52,52,52,52,52,52,52,52,52,52,52,5
2,52,52,52,52),
```

```
+ FloorArea <- c(1225,1230,1200,1000,1420,1450,1360,1510,14
00,1550,1720,1700,1660,1800,1830,1790,2010,2000,2100,2240),
+ Rooms <- c(3,3,3,2,4,3,4,4,5,6,6,5,6,7,6,6,6,6,8,7),
+ Age <- c(6,7,4,4,1,5,6,9,0.5,5,7,4,6,0.7,5,2,6,3,5,3),
+ CentralHeating <- c('YES','NO','NO','NO','YES','YES','NO'
,'NO','NO','NO','YES','NO','YES','YES','YES','NO','YES','NO
','YES','YES'),
+ stringsAsFactors = FALSE)
> print(data)
> print(summary(data))
 SNO....c.1.20.  Price....c.52..52..52..52..52..52..52..52.
.52..52..52..52..52..
 Min.   : 1.00   Min.   :52

 1st Qu.: 5.75   1st Qu.:52

 Median :10.50   Median :52

 Mean   :10.50   Mean   :52

 3rd Qu.:15.25   3rd Qu.:52

 Max.   :20.00   Max.   :52

 FloorArea....c.1225..1230..1200..1000..1420..1450..1360..1
510..
 Min.   :1000

 1st Qu.:1390

 Median :1605

 Mean   :1610

 3rd Qu.:1808

 Max.   :2240

 Rooms....c.3..3..3..2..4..3..4..4..5..6..6..5..6..7..6..6.
.6..
 Min.   :2.00

 1st Qu.:3.75

 Median :5.50

 Mean   :5.00

 3rd Qu.:6.00

 Max.   :8.00

 Age....c.6..7..4..4..1..5..6..9..0.5..5..7..4..6..0.7..5..
2..
 Min.   :0.50
```

```
 1st Qu.:3.00

 Median :5.00

 Mean   :4.46

 3rd Qu.:6.00

 Max.   :9.00

 CentralHeating....c..YES....NO....NO....NO....YES....YES..
..NO...
 Length:20

 Class :character

 Mode  :character
```

PROGRAM 2.3

```
x <- data.frame(

SNO <- c(1:20),

Price <- c(52,52,52,52,52,52,52,52,52,52,52,52,52,52,52,52,52,52,52,52),

FloorArea <-
c(1225,1230,1200,1000,1420,1450,1360,1510,1400,1550,1720,1700,1660
,1800,1830,1790,2010,2000,2100,2240),

Rooms <- c(3,3,3,2,4,3,4,4,5,6,6,5,6,7,6,6,6,6,8,7),

Age <- c(6,7,4,4,1,5,6,9,0.5,5,7,4,6,0.7,5,2,6,3,5,3),

CentralHeating <-
c('YES','NO','NO','NO','YES','YES','NO','NO','NO','NO','YES','NO','YES','
YES','YES','NO','YES','NO','YES','YES'),

stringsAsFactors = FALSE)

print(x)

mean(x$Price)

median(x$Price)

mean(x$FloorArea)
```

median(x$FloorArea)

mean(x$Rooms)

median(x$Rooms)

mean(x$Age)

median(x$Age)

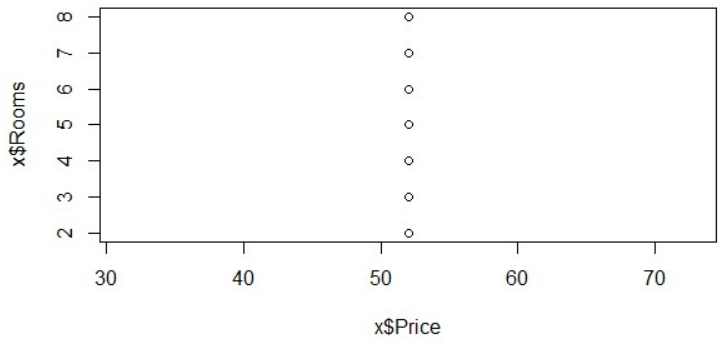
plot(x$Price,x$FloorArea)

plot(x$Price,x$Age)

plot(x$Price,x$Rooms)

**OUTPUT:**

```
> mean(x$Price)
[1] 52
> median(x$Price)
[1] 52
> mean(x$FloorArea)
[1] 1609.75
> median(x$FloorArea)
[1] 1605
> mean(x$Rooms)
[1] 5
> median(x$Rooms)
[1] 5.5
> mean(x$Age)
[1] 4.46
> median(x$Age)
[1] 5
> plot(x$Price,x$FloorArea)
> plot(x$Price,x$Age)
> plot(x$Price,x$Rooms)
```



## LAB 3

### STUDENT DATASET

| | A | B | C | D | E |
|---|---|---|---|---|---|
| 1 | Reg NO | Name | Age | Marks | Percentage |
| 2 | 1 | Ram | 12 | 55 | 55 |
| 3 | 2 | Raj | 13 | 60 | 60 |
| 4 | 3 | Sai | 14 | 65 | 65 |
| 5 | 4 | Suresh | 15 | 70 | 70 |
| 6 | 5 | Lucky | 16 | 75 | 75 |
| 7 | 6 | Krishna | 17 | 80 | 80 |
| 8 | 7 | Suraj | 18 | 85 | 85 |
| 9 | 8 | lam | 19 | 90 | 90 |
| 10 | 9 | Loae | 20 | 80 | 80 |
| 11 | 10 | Pal | 21 | 85 | 85 |
| 12 | 11 | Kiran | 22 | 75 | 75 |
| 13 | 12 | Divya | 18 | 80 | 80 |
| 14 | 13 | Bharat | 19 | 70 | 70 |
| 15 | 14 | Sohail | 20 | 75 | 75 |
| 16 | 15 | kia | 21 | 65 | 65 |
| 17 | 16 | Koi | 17 | 70 | 70 |
| 18 | 17 | manoj | 18 | 87 | 87 |
| 19 | 18 | naraine | 18 | 45 | 45 |
| 20 | 19 | minar | 18 | 34 | 34 |
| 21 | 20 | Chandu | 18 | 41 | 41 |

### PROGRAM 3.1

```
getwd()

data <- read.csv("Student.csv")

print(data)

print(is.data.frame(data))

print(ncol(data))

print(nrow(data))

AvgAge <- mean(data$Age)

print(AvgAge)

AvgMarks <- mean(data$Marks)
```

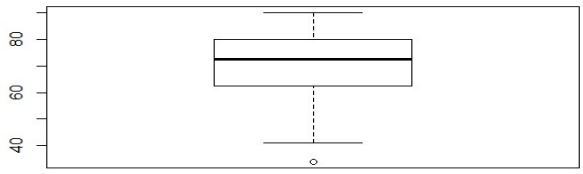
```
print(AvgMarks)
AvgPer <- mean(data$Percentage)
print(AvgPer)
print(max(data$Age))
print(min(data$Age))
print(max(data$Marks))
print(min(data$Marks))
print(mode(data$Age))
hist(data$Age,main="Age",xlab="Age")
hist(data$Marks,main="Marks",xlab="Marks")
plot(data$Age,data$Marks)
plot(data$Age,data$Percentage)
plot(data$Name,data$Marks)
plot(data$Name,data$Percentage)
boxplot(data$Age)
boxplot(data$Marks)
boxplot(data$Percentage)
Agecs <- cumsum(data$Age)
print(Agecs)
Markscs <- cumsum(data$Marks)
print(Markscs)
Percs <- cumsum(data$Percentage)
print(Percs)
hist(Agecs)
hist(Markscs)
hist(Percs)
boxplot(Agecs)
boxplot(Markscs)
```

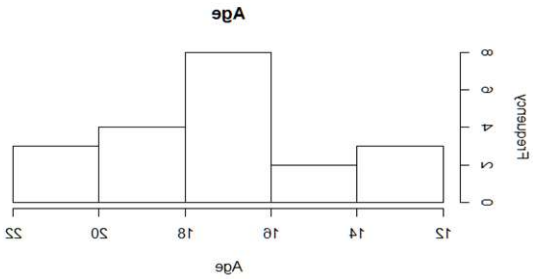
```
boxplot(Percs)

plot(Agecs,Markscs)

plot(Agecs,Percs)

plot(Markscs,Percs)

plot(Agecs,Markscs,type = "l", lty = 1)

Agemedian = median(data$Age)

print(Agemedian)

Marksmed = median(data$Marks)

print(Marksmed)

Permed = median(data$Percentage)

print(Permed)

Agef = frequency(data$Age)

print(Agef)

Marksf = frequency(data$Marks)

print(Marksf)

datasum = summary(data)

print(datasum)

varAge = var(data$Age)

print(varAge)

sdAge = sqrt(varAge)

print(sdAge)

varMarks = var(data$Marks)

print(varMarks)

sdMarks = sqrt(varMarks)

print(sdMarks)
```

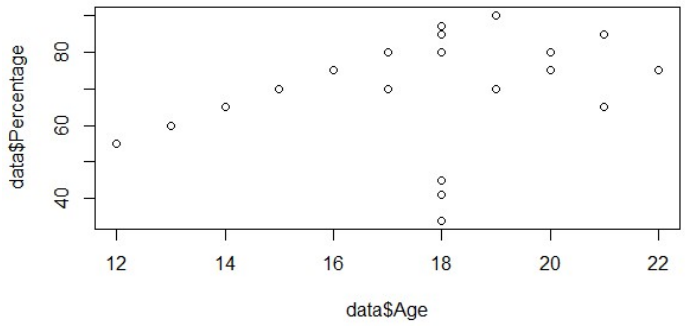
**OUTPUT:**

```
> print(is.data.frame(data))
[1] TRUE
```

```
> print(ncol(data))
[1] 5
> print(nrow(data))
[1] 20
> AvgAge <- mean(data$Age)
> print(AvgAge)
[1] 17.7
> AvgMarks <- mean(data$Marks)
> print(AvgMarks)
[1] 69.35
> AvgPer <- mean(data$Percentage)
> print(AvgPer)
[1] 69.35
> print(max(data$Age))
[1] 22
> print(min(data$Age))
[1] 12
> print(max(data$Marks))
[1] 90
> print(min(data$Marks))
[1] 34
> print(mode(data$Age))
[1] "numeric"
> hist(data$Age,main="Age",xlab="Age")
> hist(data$Marks,main="Marks",xlab="Marks")
> plot(data$Age,data$Marks)
> plot(data$Age,data$Percentage)
> plot(data$Name,data$Marks)
> plot(data$Name,data$Percentage)
> boxplot(data$Age)
> boxplot(data$Marks)
```






## LAB 4

### PROGRAM 4.1

```
> x <- c(1,2,3,4,5,6,7,8,9,10,11,12)
> dim(x) <- c(3,4)
> print(x)
     [,1] [,2] [,3] [,4]
[1,]    1    4    7   10
[2,]    2    5    8   11
[3,]    3    6    9   12
> y <- matrix(c(1,2,3,4,5,6,7,8,9,10,11,12),nrow = 3)
> print(y)
     [,1] [,2] [,3] [,4]
[1,]    1    4    7   10
[2,]    2    5    8   11
[3,]    3    6    9   12
> y <- matrix(c(1,2,3,4,5,6,7,8,9,10,11,12),nrow = 3,dimnam
es = list(c("A","B","C")))
> print(y)
  [,1] [,2] [,3] [,4]
A    1    4    7   10
B    2    5    8   11
C    3    6    9   12
> ty = t(y)
> print(ty)
      A  B  C
[1,]  1  2  3
[2,]  4  5  6
[3,]  7  8  9
[4,] 10 11 12
> z1 = cbind(c(1,2,3),c(4,5,6),c(7,8,9),c(10,11,12))
> print(z1)
     [,1] [,2] [,3] [,4]
[1,]    1    4    7   10
[2,]    2    5    8   11
[3,]    3    6    9   12
> z2 = rbind(c(1,4,7,10),c(2,5,8,11),c(3,6,9,12))
> print(z2)
```

```
     [,1] [,2] [,3] [,4]
[1,]    1    4    7   10
[2,]    2    5    8   11
[3,]    3    6    9   12
> a = matrix(1:12,nrow = 3,dimnames = list(c("A","B","C")))
> print(a)
  [,1] [,2] [,3] [,4]
A    1    4    7   10
B    2    5    8   11
C    3    6    9   12
> x1 = matrix(12:1,nrow = 3)
> print(x1)
     [,1] [,2] [,3] [,4]
[1,]   12    9    6    3
[2,]   11    8    5    2
[3,]   10    7    4    1
> matmul = x*x1
> print(matmul)
     [,1] [,2] [,3] [,4]
[1,]   12   36   42   30
[2,]   22   40   40   22
[3,]   30   42   36   12
```

PROGRAM 4.2

```
> x <- 1:40
> y <- sample(x,5)
> print(y)
[1] 32 13  9 40 20
> x1 = 1:2
> z <- sample(x1,10,replace=TRUE)
> print(z)
 [1] 2 1 1 1 2 2 2 2 1 1
> a <- 1:2
> z1 <- sample(a,1,prob = c(9,1),replace=TRUE)
> print(z1)
[1] 1
> p <- choose(40,5)
> print(p)
[1] 658008
> f = 5
> fact <- function( f ) {
+ if( f <= 1) {
+ return(1)
+ } else {
+ return(f * fact(f-1))
+ }
+ fact(f)
+ }
> fact(f)
[1] 120
```

## LAB 5

### PROGRAM 5.1

```
> a = dbinom(3,size=5,prob=0.95)
> print(a)
[1] 0.02143438
> dbinom(1,size=5,prob=0.95)
[1] 2.96875e-05
> dbinom(2,size=5,prob=0.95)
[1] 0.001128125
> dbinom(3,size=5,prob=0.95)
[1] 0.02143438
> dbinom(4,size=5,prob=0.95)
[1] 0.2036266
> dbinom(5,size=5,prob=0.95)
[1] 0.7737809
> c = pbinom(3,size=5,prob=0.95)
> print(c)
[1] 0.0225925
```

### PROGRAM 5.2

```
> dbinom(0,size=20,prob=0.2)
[1] 0.01152922
> dbinom(1,size=20,prob=0.2)
[1] 0.05764608
> dbinom(2,size=20,prob=0.2)
[1] 0.1369094
> dbinom(3,size=20,prob=0.2)
[1] 0.2053641
> dbinom(4,size=20,prob=0.2)
[1] 0.2181994
> dbinom(5,size=20,prob=0.2)
[1] 0.1745595
> dbinom(6,size=20,prob=0.2)
[1] 0.1090997
> dbinom(7,size=20,prob=0.2)
[1] 0.05454985
> dbinom(8,size=20,prob=0.2)
[1] 0.02216088
> dbinom(9,size=20,prob=0.2)
[1] 0.007386959
> dbinom(10,size=20,prob=0.2)
[1] 0.002031414
> dbinom(11,size=20,prob=0.2)
[1] 0.0004616849
> dbinom(12,size=20,prob=0.2)
[1] 8.656592e-05
```

```
> dbinom(13,size=20,prob=0.2)
[1] 1.331783e-05
> dbinom(14,size=20,prob=0.2)
[1] 1.664729e-06
> dbinom(15,size=20,prob=0.2)
[1] 1.664729e-07
> dbinom(16,size=20,prob=0.2)
[1] 1.30057e-08
> dbinom(17,size=20,prob=0.2)
[1] 7.65041e-10
> dbinom(18,size=20,prob=0.2)
[1] 3.187671e-11
> dbinom(19,size=20,prob=0.2)
[1] 8.388608e-13
> dbinom(20,size=20,prob=0.2)
[1] 1.048576e-14
```

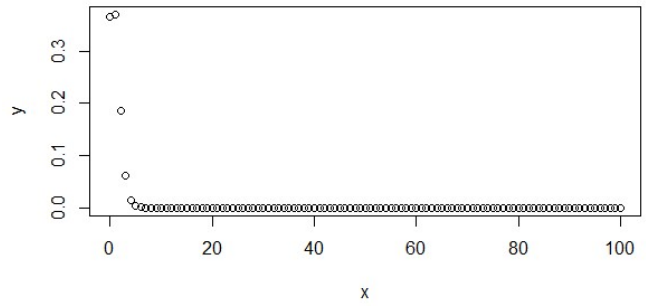
PROGRAM 5.3

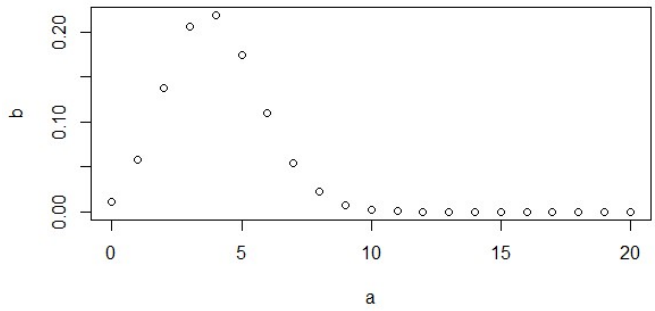
```
> x = seq(from = 0, to = 100, by = 1)
> print(x)
  [1]   0   1   2   3   4   5   6   7   8   9  10
  11  12  13  14  15  16  17  18  19
 [21]  20  21  22  23  24  25  26  27  28  29  30
  31  32  33  34  35  36  37  38  39
 [41]  40  41  42  43  44  45  46  47  48  49  50
  51  52  53  54  55  56  57  58  59
 [61]  60  61  62  63  64  65  66  67  68  69  70
  71  72  73  74  75  76  77  78  79
 [81]  80  81  82  83  84  85  86  87  88  89  90
  91  92  93  94  95  96  97  98  99
[101] 100
> for (x in 100){
+ d = dbinom(x,size = 20,prob=0.01)
+ print(d)
+ }
[1] 0
```

PROGRAM 5.4

```
> a = 0:20
> print(a)
 [1]  0  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 1
6 17 18 19 20
> b = dbinom(a,size=20,prob=0.2)
> plot(a,b)
> x = 0:100
> print(x)
  [1]   0   1   2   3   4   5   6   7   8   9  10  11
 12  13  14  15  16  17  18  19
```

```
 [21]  20  21  22  23  24  25  26  27  28  29  30  31
 32  33  34  35  36  37  38  39
 [41]  40  41  42  43  44  45  46  47  48  49  50  51
 52  53  54  55  56  57  58  59
 [61]  60  61  62  63  64  65  66  67  68  69  70  71
 72  73  74  75  76  77  78  79
 [81]  80  81  82  83  84  85  86  87  88  89  90  91
 92  93  94  95  96  97  98  99
[101] 100
> y = dbinom(x,size=100,prob=0.01)
> plot(x,y)
```




PROGRAM 5.5

```
> pbinom(3,5,0.95)
[1] 0.0225925
> dbinom(4,5,0.95)+dbinom(5,5,0.95)
[1] 0.9774075
> dbinom(0,20,0.2)+dbinom(1,20,0.2)+dbinom(2,20,0
.2)+dbinom(3,20,0.2)+dbinom(4,20,0.2)
[1] 0.6296483
> dbinom(5,size=20,prob=0.2)+dbinom(6,size=20,pro
b=0.2)+dbinom(7,size=20,prob=0.2)+
+ dbinom(8,size=20,prob=0.2)+dbinom(9,size=20,pro
b=0.2)+dbinom(10,size=20,prob=0.2)+
```

```
+ dbinom(11,size=20,prob=0.2)+dbinom(12,size=20,p
rob=0.2)+dbinom(13,size=20,prob=0.2)+
+ dbinom(14,size=20,prob=0.2)+dbinom(15,size=20,p
rob=0.2)+dbinom(16,size=20,prob=0.2)+
+ dbinom(17,size=20,prob=0.2)+dbinom(18,size=20,p
rob=0.2)+dbinom(19,size=20,prob=0.2)+
+ dbinom(20,size=20,prob=0.2)
[1] 0.3703517
```

PROGRAM 5.6

```
> dbinom(10,15,0.4)+dbinom(11,15,0.4)+dbinom(12,1
5,0.4)+dbinom(13,15,0.4)+dbinom(14,15,0.4)+dbinom
(15,15,0.4)
[1] 0.0338333
> dbinom(3,15,0.4)+dbinom(4,15,0.4)+dbinom(5,15,0
.4)+dbinom(6,15,0.4)+dbinom(7,15,0.4)+dbinom(8,15
,0.4)
[1] 0.8778386
> dbinom(5,15,0.4)
[1] 0.1859378
```

## LAB 6

PROGRAM 6.1

```
> a = dpois(6, lambda=4)
> print(a)
[1] 0.1041956
```

PROGRAM 6.2

```
> n = 4000
> q = 0.05
> lambda = n*q
> print(lambda)
[1] 200
> a = dpois(1,lambda)
> print(a)
[1] 2.767793e-85
> b = ppois(3,lambda)
> print(b)
[1] 1.873151e-81
```

PROGRAM 6.3

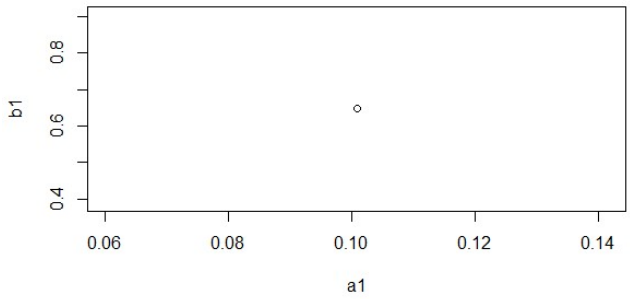
```
> a = dpois(7,lambda = 8)
> print(a)
[1] 0.1395865
```

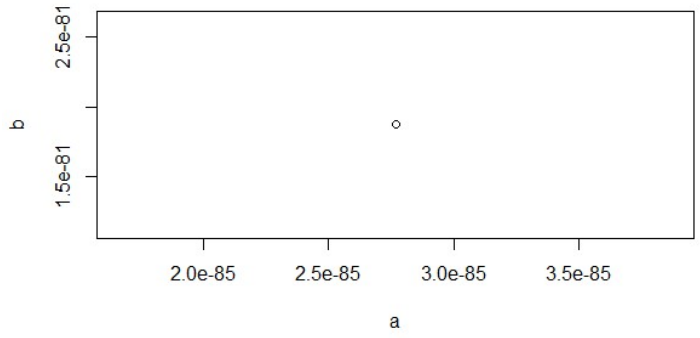
PROGRAM 6.4

```
> # problem - 4(a)
> a = dpois(5,lambda = 3)
> print(a)
[1] 0.1008188
> # problem - 4(b)
> b = ppois(3,lambda = 3)
> print(b)
[1] 0.6472319
> # problem - 4(c)
> c = ppois(2,lambda = 3,lower = FALSE)
> print(c)
[1] 0.5768099
```

PROGRAM 6.5

```
> n = 4000
> q = 0.05
> lambda = n*q
> print(lambda)
[1] 200
> a = dpois(1,lambda)
> print(a)
[1] 2.767793e-85
> b = ppois(3,lambda)
> print(b)
[1] 1.873151e-81
> plot(a,b)
> a1 = dpois(5,lambda = 3)
> print(a1)
[1] 0.1008188
> b1 = ppois(3,lambda = 3)
> print(b1)
[1] 0.6472319
> plot(a1,b1)
```




PROGRAM 6.6

```
> n = 300
> q = 0.01
> lambda = n*q
> print(lambda)
[1] 3
> a = dpois(5,lambda)
> print(a)
[1] 0.1008188
> b = dpois(6,lambda)
> print(b)
[1] 0.05040941
> c = dpois(7,lambda)
> print(c)
[1] 0.02160403
> r = a+b+c
> print(r)
[1] 0.1728323
```