

Assignment 2

1)

A group of 25 people was surveyed to find their soft-drink preference. The categories of soft-drink used in the survey were Limca, Coca-cola, Pepsi and Mangola. The data are:

3, 4, 1, 1, 3, 4, 3, 3, 1, 3, 2, 1, 2, 1, 2, 3, 2, 3, 1, 1, 1, 1, 4, 3, 1.

Represent the data by: (i) barplot of frequencies and (ii) barplot of proportions.

```
> softDrink<-scan()
```

1: 3

2: 4

3: 1

4: 1

5: 3

6: 4

7: 3

8: 3

9: 1

10: 3

11: 2

12: 1

13: 2

14: 1

15: 2

16: 3

17: 2

18: 3

19: 1

20: 1

21: 1

22: 1

23: 4

24: 3

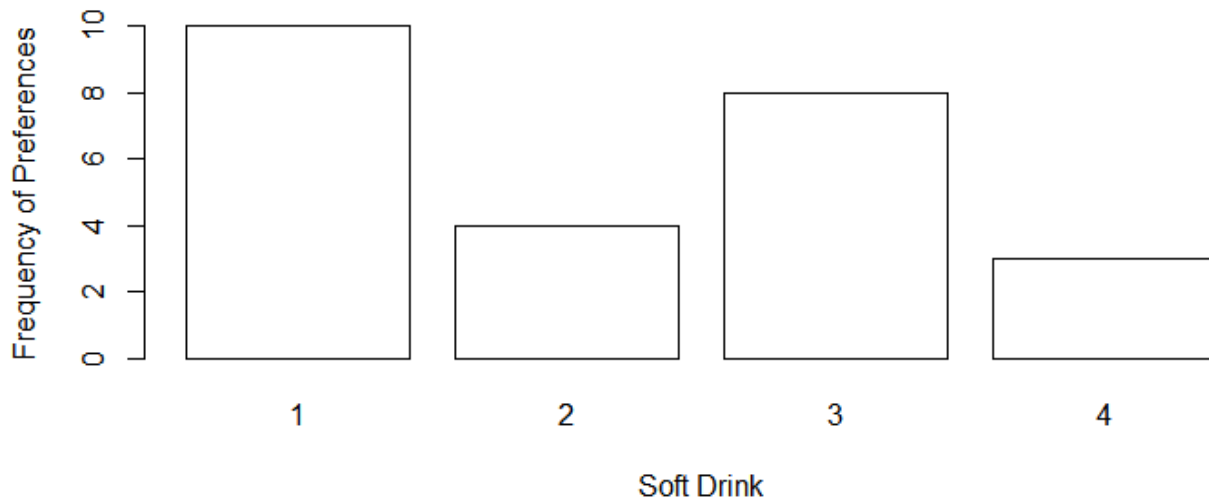
25: 1

26:

Read 25 items

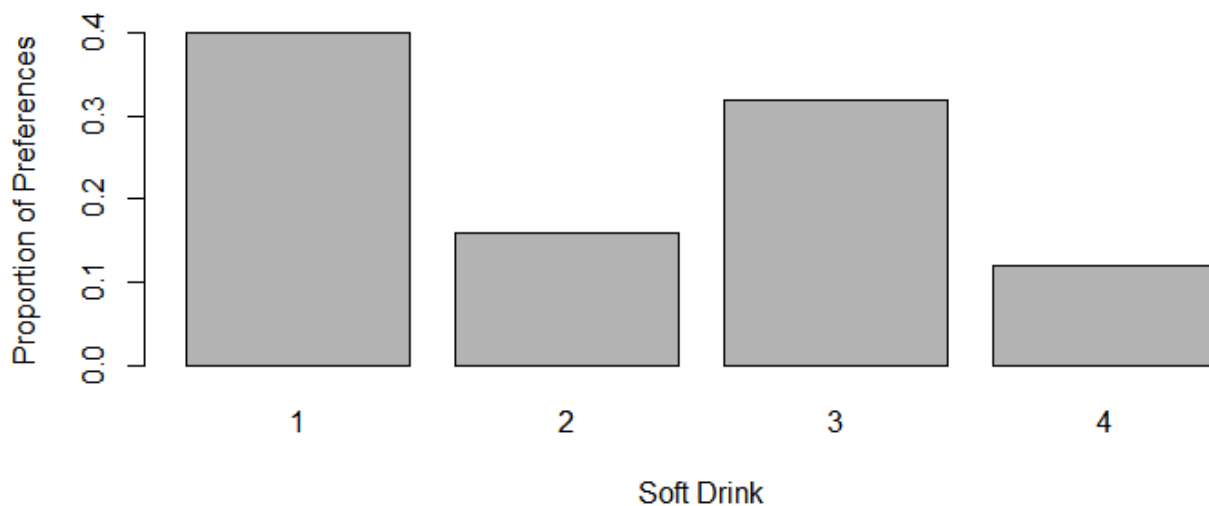
i) barplot of frequencies

```
> barplot(table(softDrink),xlab="Soft Drink",ylab = "Frequency of  
Preferences",main="",col="white");
```



(ii) barplot of proportions.

```
> barplot(table(softDrink)/length(softDrink),xlab="Soft Drink",ylab="Proportion of  
Preferences",main="",col="gray70");
```



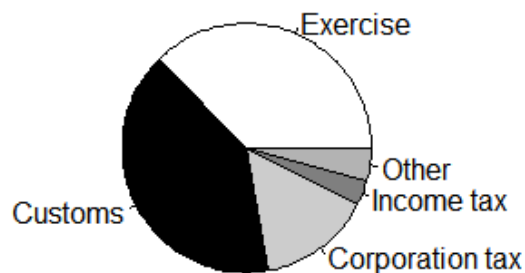
2)

The tax revenue of India (in crores of Rs.), as provided in budget, when broken into various sources are given below. Represent the data by a pie chart.

Sources	Excise	Customs	Corporation Tax	Income tax	Other
Tax revenue	6526	7108	2568	560	763

```
> pie.tax<- c(6526,7108,2563,560,763);  
> names(pie.tax)<-c("Exercise","Customs","Corporation tax","Income tax","Other");  
> pie(pie.tax ,main="The tax revenue of India (1984-  
85",col=c("white","black","gray80","gray50","gray70"));
```

The tax revenue of India(1984-85



3)

Following are heights of 45 students.

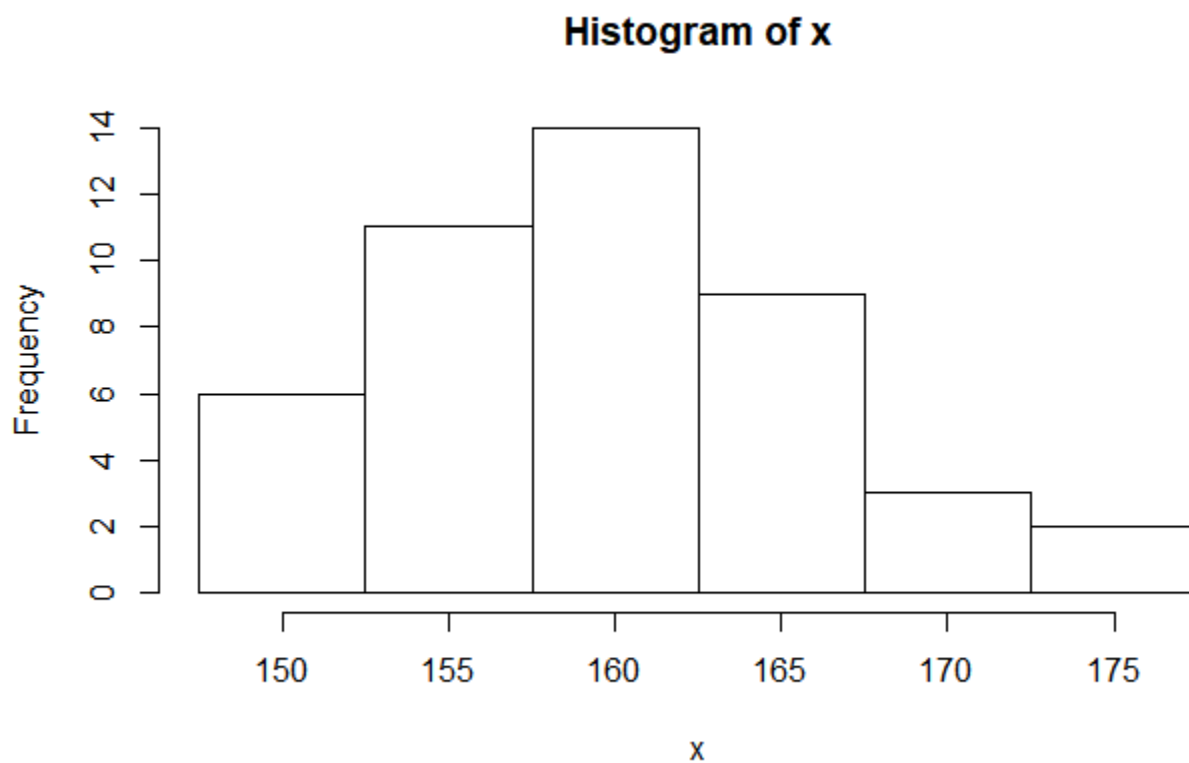
170 151 154 160 158 154 171 156 160 157 160 157 148 165 158 159 155 151
152 161 156 164 156 163 174 153 170 149 166 154 166 160 160 161 154 163
164 160 148 162 167 165 158 158 176

Create Histogram

```
> x<-scan()
```

1: 170
2: 151
3: 154
4: 160
5: 158
6: 154
7: 171
8: 156
9: 160
10: 157
11: 160
12: 157
13: 148
14: 165
15: 158
16: 159
17: 155
18: 151
19: 152
20: 161
21: 156
22: 164
23: 156
24: 163
25: 174
26: 153
27: 170
28: 149
29: 166
30: 154
31: 166
32: 160
33: 160
34: 161
35: 154
36: 163

```
37: 164
38: 160
39: 148
40: 162
41: 167
42: 165
43: 158
44: 158
45: 176
46:
Read 45 items
> brk<-seq(147.5,177.5,5);
> brk;
[1] 147.5 152.5 157.5 162.5 167.5 172.5 177.5
> hist(x,breaks=brk,col="white");
```



4)

The following table shows the projected population (in millions) of a country for the year 2005. The projections are broken down by age groups where grouping follow natural areas of interest such as preschool (below 5 years), education group (divided into 3 intervals, 5–13, 14–17 and 18–24), adult group (covering 25–64 years with 4 intervals of equal widths) and finally senior citizens' group (65 and above). Construct a histogram for the data.

Age Group Projected Population

Below 5	18
5–14	35
14–18	16
18–25	25
25–35	34
35–45	41
45–55	36
55–65	22
65 and above	32

```
> midx<-seq(12.5,112.5,25);
> frequency<-c(5,8,13,11,3);
> y<-rep(midx,frequency);
> brk<-seq(0,125,25);
> hist(y,breaks=brk,xlab="Sales",main="",col="gray70");
> midx<-c(2.5,9.5,16,25,30,40,50,60,82.5);
> frequency<-c(18,35,16,25,34,41,36,22,32);
> brk<-c(0.5,14,18,25,35,45,55,65,100);
> y<-rep(midx,frequency);
> hist(y,breaks=brk,xlab="Age Group",ylab="Agewise Projected
Population",col="gray70");
```



5)

Following table shows the frequency distribution of college student according to their pocket money (daily). Draw histogram and frequency polygon on the same graph.

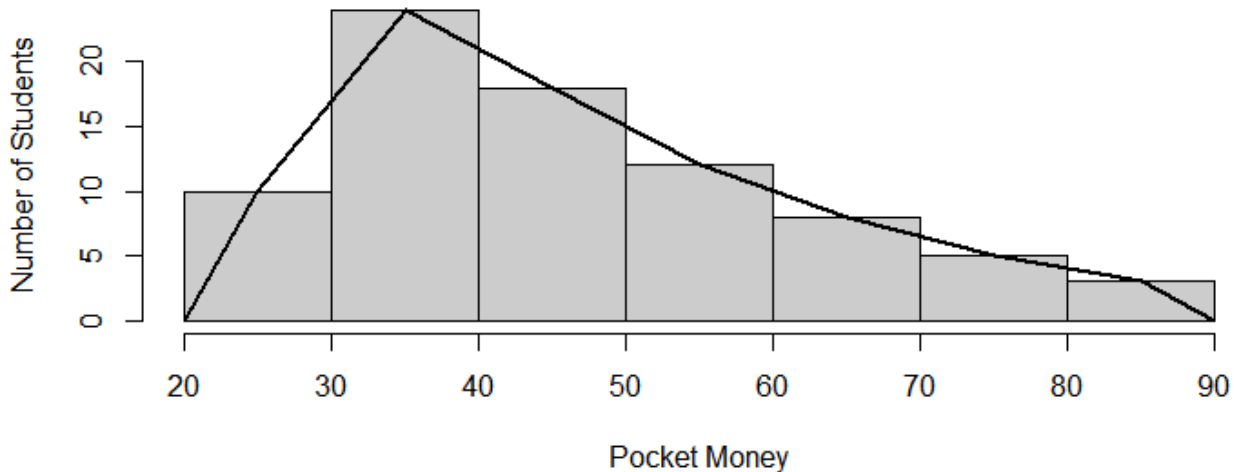
Frequency Distribution of Pocket Money

Pocket Money (In Rs) No. of Students

20-29	10
30-39	24
40-49	18
50-59	12
60-69	8
70-79	5
80-89	3

```
> midx<-seq(25,85,10);
> frequency<-c(10,24,18,12,8,5,3);
> x<-rep(midx,frequency);
> brk<-seq(20,90,10)
```

```
> hist(x,breaks=brk,main="",xlab="Pocket Money",ylab="Number of Students");
> temp<-hist(x,xlab="Pocket Money",ylab="Number of
Students",main="",col=gray(0.8));
> lines(c(min(temp$breaks),temp$mids,max(temp$breaks)),lwd=2,c(0,temp$counts,0
),type="l");
```



6)

The following frequency distribution relates to lives of 400 light bulbs. Draw “less than” and “more than” type ogive curves

Table: Life of Bulbs

Life of bulb (in hrs.):	600–699	700–799	800–899	900–999	1000–1099
No. of bulbs:	85	77	124	78	36

```
freq<-c(0,85,77,124,78,36,0);
> lc<-cumsum(freq);
> lc;
[1] 0 85 162 286 364 400 400
> uc<-1:7;
> for(i in 7:1){
+ uc[i]<-sum(freq[7:i])
+ };
```



```

> uc
[1] 400 400 315 238 114 36 0
> lbx<-seq(499.5,1099.5,100);
> #vector of lower class boundaries
> lbx;
[1] 499.5 599.5 699.5 799.5 899.5 999.5 1099.5
> ubx<-seq(599.5,1199.5,100);
> #vector of upper class boundaries
> ubx;
[1] 599.5 699.5 799.5 899.5 999.5 1099.5 1199.5
> plot(ubx,lc,type="l",xlim=c(499.5,1199.5),xlab="Class interval",ylab="Cumulative
Frequency",main="",lwd=2);
> lines(lbx,uc,lty=2,lwd=2);

```

