Assignment 12

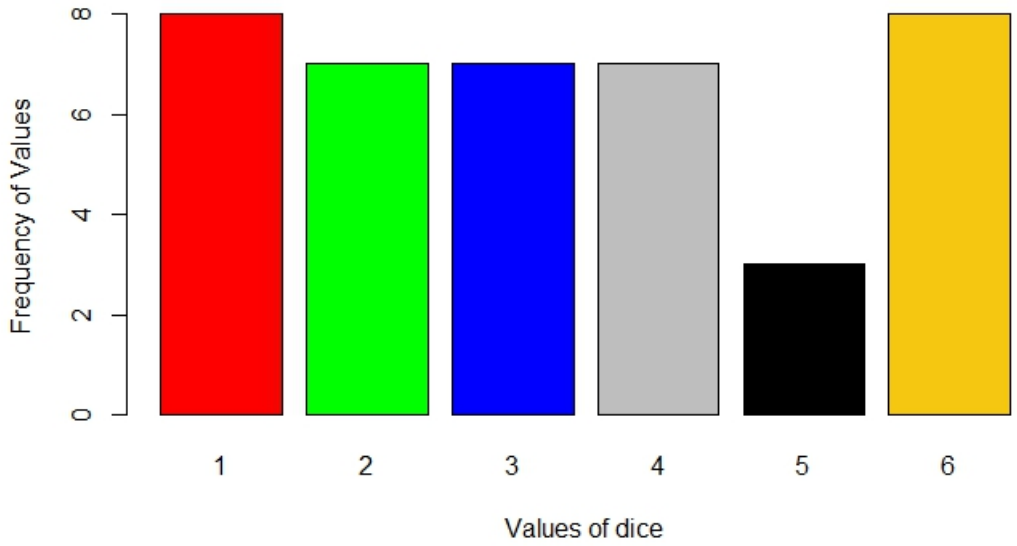
Obtain probability distribution of x, where x is number of spots showing when a six-sided symmetric die is rolled. Simulate random samples of sizes, 40, 70 and 100 respectively and verify frequency interpretation of probability

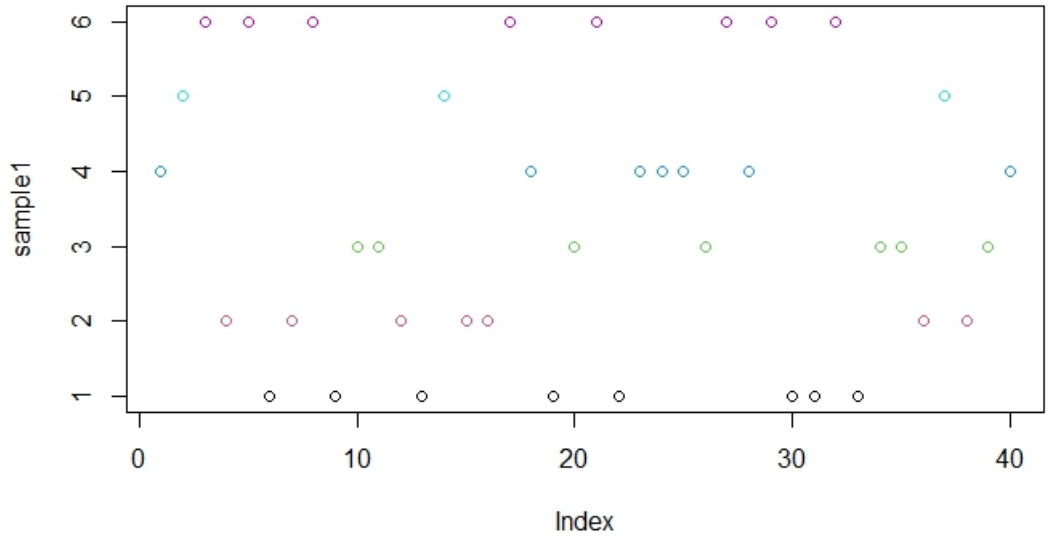
```
sample1 = sample(c(1:6),size=40,replace=TRUE)
plot(sample1,col=sample1)
barplot(table(sample1),col=c('red','green','blue','gray','black',7),xlab='Val
ues of dice',ylab='Frequency of Values')
print("Probability distribution:")
print(table(sample1)/40)
sample2 = sample(c(1:6),size=70,replace=TRUE)
plot(sample2,col=sample2)
barplot(table(sample2),col=c('red','green','blue','gray','black',7),xlab='Val
ues of dice',ylab='Frequency of Values')
print("Probability distribution:")
print(table(sample2)/70)
sample3 = sample(c(1:6),size=100,replace=TRUE)
plot(sample3,col=sample3)
barplot(table(sample3),col=c('red','green','blue','gray','black',7),xlab='Val
ues of dice',ylab='Frequency of Values')
print("Probability distribution:")
print(table(sample3)/100)
```

Output

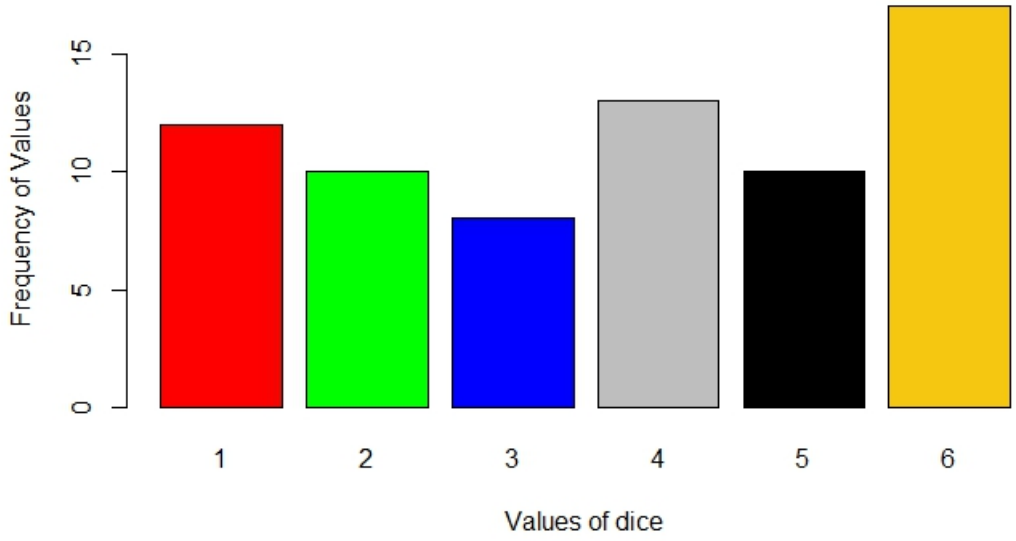
```
> source('E:/Data Science/Assignment 12/A12.R')
[1] "Probability distribution:"
sample1
    1     2     3     4     5     6
0.200 0.175 0.175 0.175 0.075 0.200
[1] "Probability distribution:"
sample2
        1         2         3         4         5         6
0.1714286 0.1428571 0.1142857 0.1857143 0.1428571 0.2428571
[1] "Probability distribution:"
sample3
   1    2    3    4    5    6
0.15 0.19 0.21 0.20 0.15 0.10
```

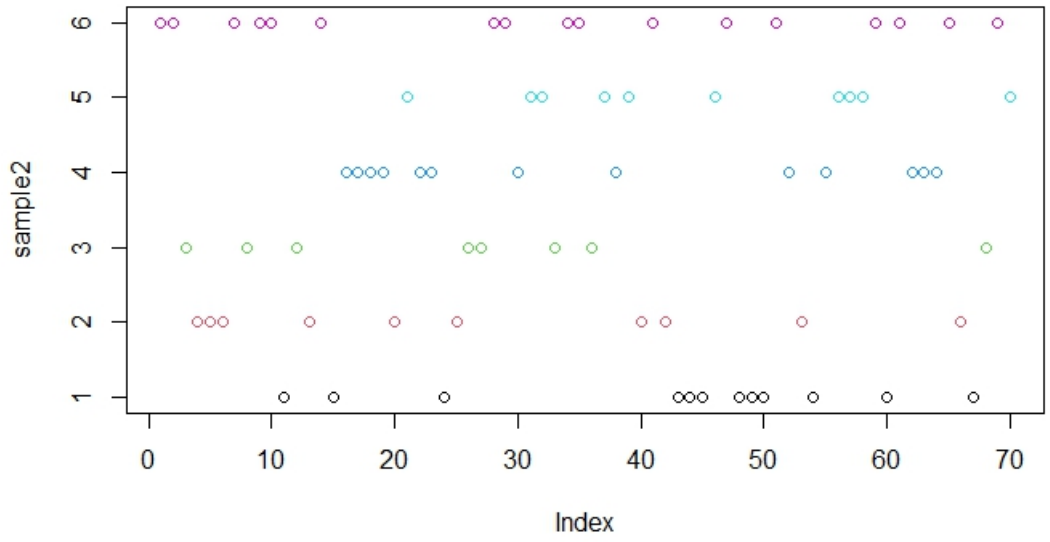
Graphs
Sample 1



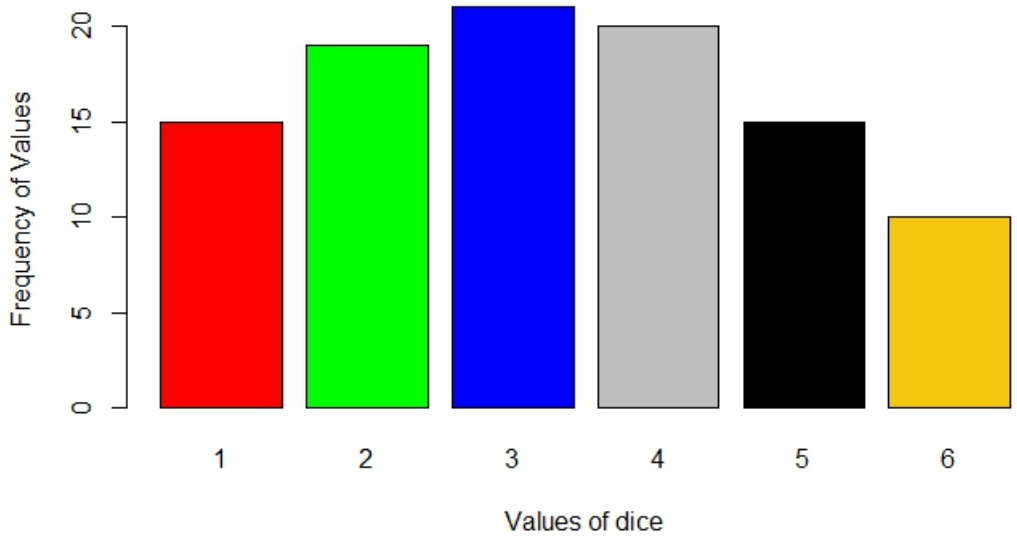


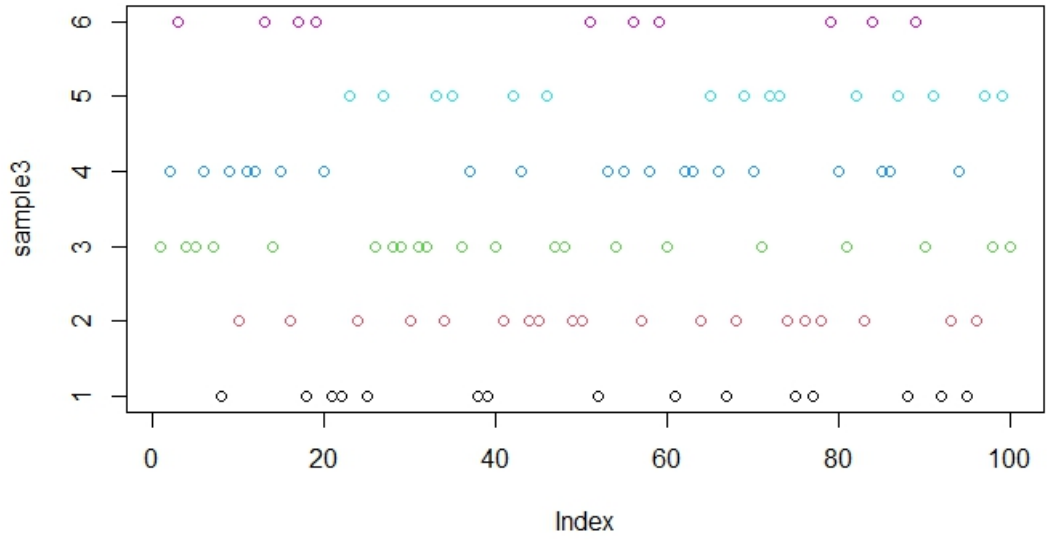
Sample 2


Frequency of Values
0
5
10
15
1
2
3
4
5
6
Values of dice


sample2
1
2
3
4
5
6
0
10
20
30
40
50
60
70
Index

Sample 3


Frequency of Values
0
5
10
15
20
1
2
3
4
5
6
Values of dice


sample3
1
2
3
4
5
6
0
20
40
60
80
100
Index