Financial Time Series Homework1

Name: Venkata Avinash

Question 1

Create a vector of the positive odd integers less than 100; Remove the values greater than 60 and less than 80; Find the variance of the remaining set of values

```
e = seq ( from =1 , to =100 , by =2) ; e
```

```
##  [1]  1  3  5  7  9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45
## [24] 47 49 51 53 55 57 59 61 63 65 67 69 71 73 75 77 79 81 83 85 87 89 91
## [47] 93 95 97 99
```

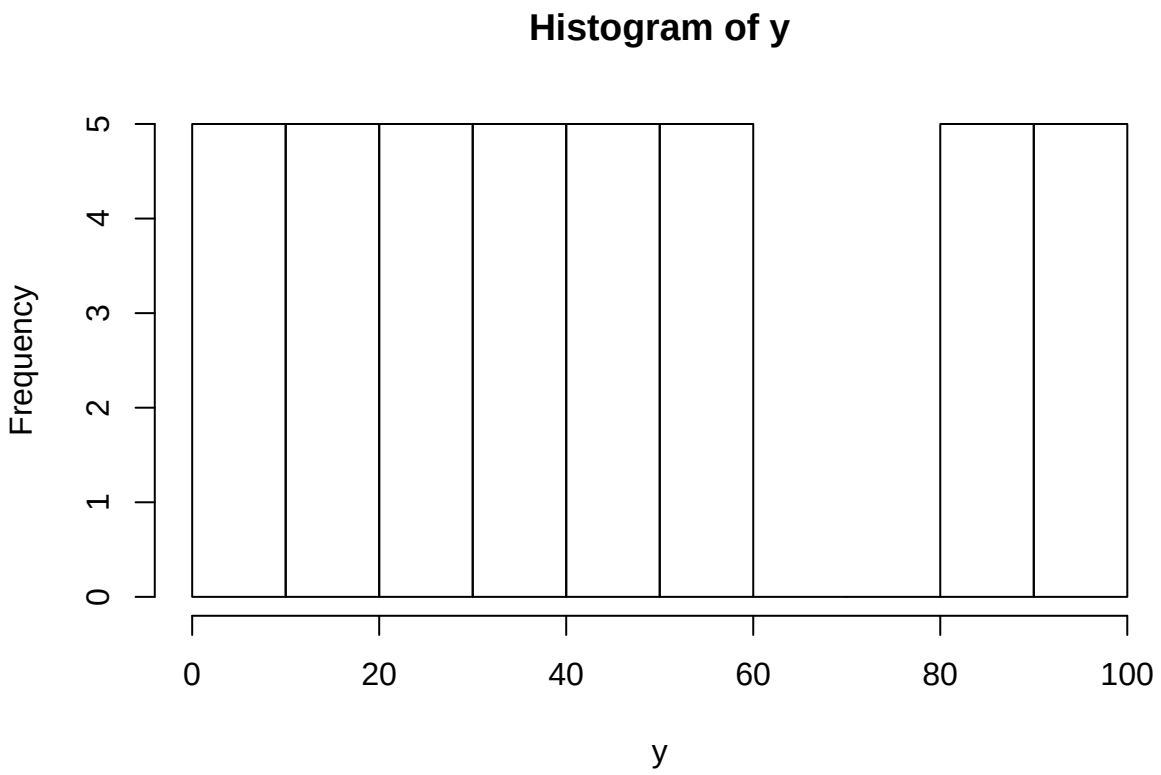
```
y = subset(e, (e>80 | e<60))
y
```

```
##  [1]  1  3  5  7  9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45
## [24] 47 49 51 53 55 57 59 81 83 85 87 89 91 93 95 97 99
```

```
var(y)
```

```
## [1] 931.2821
```

```
hist(y)
```



Question 2

What's the difference in output between the commands 2*1:5 and (2*1):5 Why is there a difference

```
x<- 2*1:5
x
```

```
## [1]  2  4  6  8 10
```

```
y<- (2*1):5
y
```

```
## [1] 2 3 4 5
```

With command 2*1:5 the series starts with 2 and jumps 2 places producing 5 values till and with command (2*1):5 the series starts with 2 but does not jump 2 places rather increments with 1 and goes until 5.

Question 3

If you wanted to enter the odd numbers from 1 to 19 in the variable x, what command would you use

```
a <- seq(1,19,2)
a
```

```
##  [1]  1  3  5  7  9 11 13 15 17 19
```

Question 4

If you create a variable using the following command y=c(-1,2,-3,4,-5), what command would put the positive values of y into the variable z?

```
y=c(-1,2,-3,4,-5)
z<- y[which(y>0)]
y
```

```
## [1] -1  2 -3  4 -5
```

```
z
```

```
## [1] 2 4
```

Question 5

What R command would give you the 95th percentile for a chi-squared distribution with 10 degrees of freedom?

```
b<- qchisq(.95, df=10)
b
```

```
## [1] 18.30704
```

Question 6

Generate a vector of 1000 standard normal random variables using the command x=rnorm(1000), use R to give a five number summary of your simulated data; what is the mean and variance of your x variable? Make and print a histogram for this data.

```
x = rnorm(1000)
summary(x)
```

```
##     Min.  1st Qu.   Median     Mean  3rd Qu.     Max.
## -2.34065 -0.65324 -0.03507 -0.01140  0.62780  3.49064
```

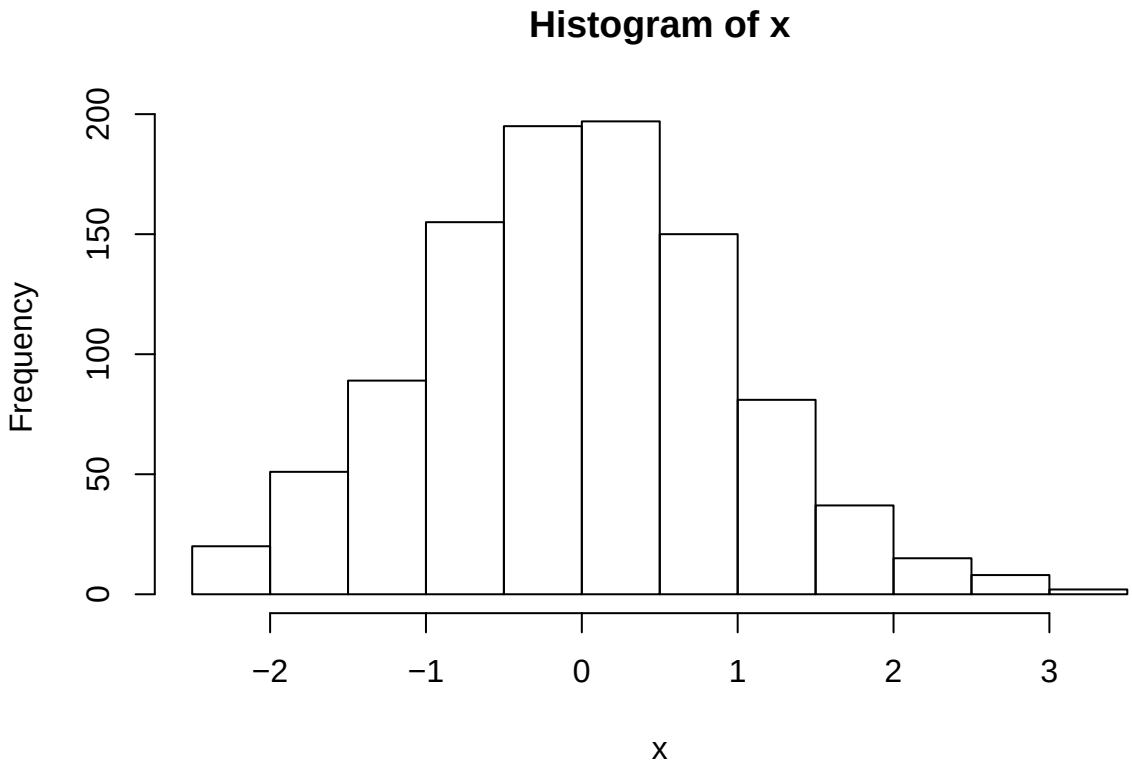
```
mean((x))
```

```
## [1] -0.01139526
```

```
var(x)
```

```
## [1] 0.968758
```

```
bins=seq(min(x),max(x),0.5)
hist(x)
```


Histogram of x
Frequency
0
50
100
150
200
−2
−1
0
1
2
3
x