

## **EXERCISE 5**

### **AIM:**

### **KURTOSIS IN R PROGRAMMING**

### **PRELIMINARIES:**

- Kurtosis is a numerical method in statistics that measures the sharpness of the peak in the data distribution.
- There exist 3 types of Kurtosis values on the basis of which sharpness of the peak is measured.
- These are: Platykurtic, Mesokurtic, and Leptokurtic

### **CODE:**

#### **PLATYKURTIC:**

```
# Required for kurtosis() function
```

```
library(moments)
```

```
# Defining data vector
```

```
x <- c(rep(61, each = 10), rep(64, each = 18),  
rep(65, each = 23), rep(67, each = 32), rep(70, each = 27),  
rep(73, each = 17))
```

```
# output to be present as PNG file
```

```
png(file = "platykurtic.png")
```

```
# Print skewness of distribution
```

```
print(kurtosis(x))
```

```
# Histogram of distribution
```

```
hist(x)
```

```
# Saving the file
```

```
dev.off()
```

## **MESORKURTIC:**

```
# Required for kurtosis() function
library(moments)

# Defining data vector
x <- rnorm(100)
# output to be present as PNG file
png(file = "mesokurtic.png")
# Print skewness of distribution
print(kurtosis(x))
# Histogram of distribution
hist(x)
# Saving the file
dev.off()
```

## **LEPTOKURTIC:**

```
# Required for kurtosis() function
library(moments)

# Defining data vector
x <- c(rep(61, each = 2), rep(64, each = 5),
      rep(65, each = 42), rep(67, each = 12), rep(70, each = 10))

# output to be present as PNG file
png(file = "leptokurtic.png")

# Print skewness of distribution
print(kurtosis(x))
# Histogram of distribution
hist(x)
# Saving the file
dev.off()
```

## **RESULT:**

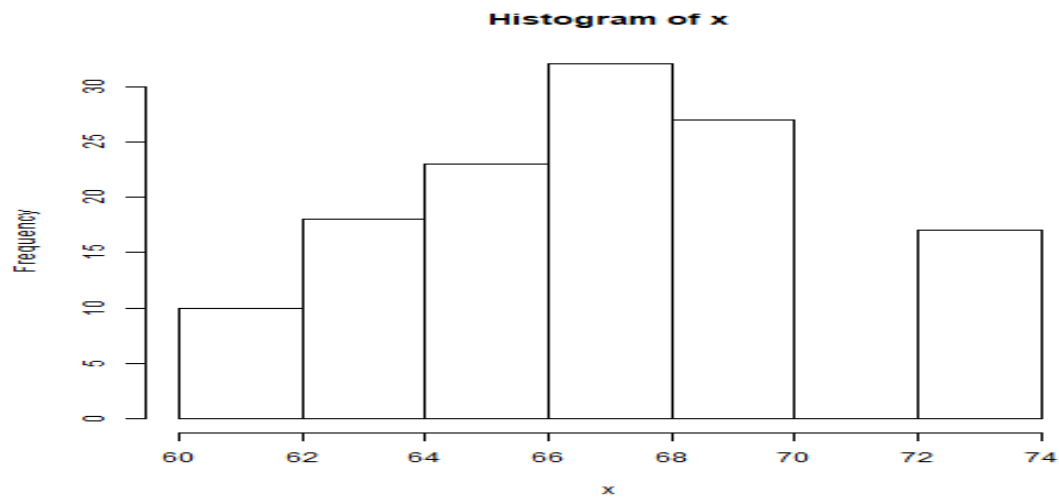
Thus, Kurtosis is computed in R Language Programming successfully.

## PLATYKURTIC:

### Output:

[1] 2.258318

### Graphical Representation:

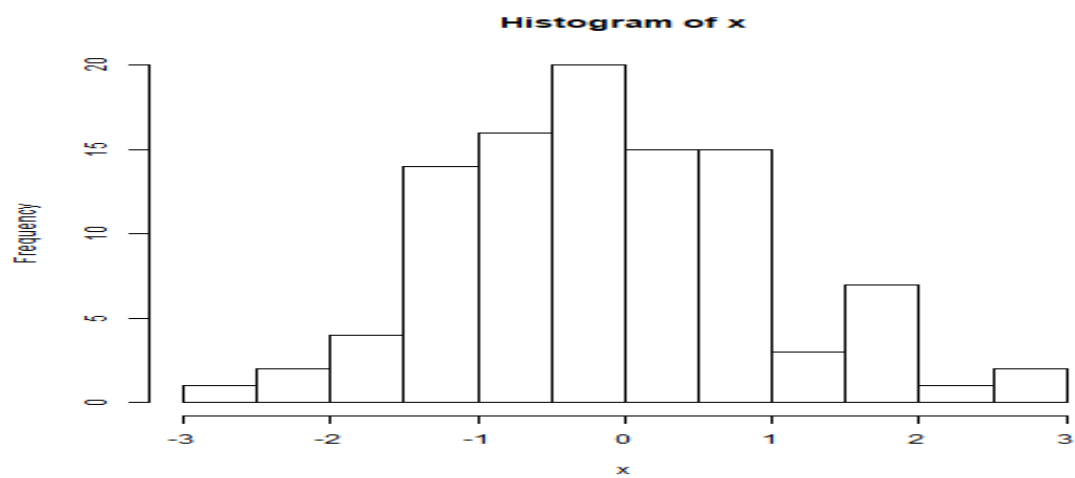


## MESOKURTIC:

### Output:

[1] 2.963836

### Graphical Representation:



**LEPTOKURTIC:**

**Output:**

[1] 3.696788

**Graphical Representation:**

