EXPT NO: 4	FUNCTIONS
DATE: 05.02.25	

AIM:

To perform build-in and user-defined function in R programming.

Built-in Functions in R

Write R programs to use the following built-in functions:

1.Find the square root of a given number.

Code:

```
find_sqrt <- function(num) {
  return(sqrt(num))}
num <- 25
print(find_sqrt(num))
```

Output:

```
> find_sqrt <- function(num) {
+   return(sqrt(num))
+ }
> num <- 25
> print(find_sqrt(num))
[1] 5
```

2.Compute the mean and median of a given vector.

Code:

```
values <- c(12, 45, 78, 23,  89, 34, 67)
mean_value <- mean(values)
median_value <- median(values)
print(paste("Mean value:", mean_value))
print(paste("Median value:", median_value))
```

Output:

```
> print(paste("Mean value:", mean_value))
[1] "Mean value: 49.7142857142857"
> print(paste("Median value:", median_value))
[1] "Median value: 45"
```

3.Find the maximum and minimum value in a given set of numbers.

Code:

```
find_max_min <- function(set_values) {
  max_value <- max(set_values)
```

```
  min_value <- min(set_values)
  return(list(maximum = max_value, minimum = min_value))
}
set_values <- c(15, 42, 8, 23, 56, 3, 90, 7)
result <- find_max_min(set_values)
print(paste("Maximum value:", resultmaximum))
print(paste("Minimum value:", resultminimum))
```

Output:

```
> print(paste("Maximum value:", result$maximum))
[1] "Maximum value: 90"
> print(paste("Minimum value:", result$minimum))
[1] "Minimum value: 3"
```

User-Defined Functions in R

1.Write an R program to create a function addNumbers() that takes two numbers as input and returns their sum.

Code:

```
addNumbers <- function(num1, num2) {
  return(num1 + num2)
}
num1 <- as.numeric(readline("Enter first number: "))
num2 <- as.numeric(readline("Enter second number: "))
addition_result <- addNumbers(num1, num2)
print(addition_result)
```

Output:

```
> num1 <- as.numeric(readline("Enter first number: "))
Enter first number: 7
> num2 <- as.numeric(readline("Enter second number: "))
Enter second number: 16
> addition_result <- addNumbers(num1, num2)
> print(addition_result)
[1] 23
```

2.Write a function findMax(a, b, c) that takes three numbers as input and returns the greatest number.

Code:

```
findMax <- function(a, b, c) {
  if (a >= b & a >= c) {
```

```
  return(a)
 } else if (b >= a & b >= c) {
  return(b)
 } else {
  return(c)
 }
}
a <- 45
b <- 65
c <- 76
max_result <- findMax(a, b, c)
print( max_result)
```

Output:

```
> a <- 45
> b <- 65
> c <- 76
> max_result <- findMax(a, b, c)
> print( max_result)
[1] 76
```

RESULT:

Thus, the R programming is implemented and executed successfully.