Functions

1. Create a function as follows:

```
pow <- function(x, y) {
# function to print x raised to the power y
result <- x^y print(result)
}
pow(8,2)
pow(10,2)
```

2. Create a function as follows:

```
check <- function(x) {
if (x>0) {
result <- "Positive"
} else if (x<0) {
result <- "Negative"
} else {
result <- "Zero"
}
return(result)
}
check(1)
check(-110)
check(0)
```

3. Create a function as follows:

```
multi_return <- function() {
my_list <- list("color" = "red", "size" = 20, "shape" = "round")
return(my_list)
}
a <- multi_return()
a$color
a$shape
```

4.

```
recursive.factorial <- function(x) {
if (x == 0) return (1)
else return (x * recursive.factorial(x-1))
}
recursive.factorial(5)
recursive.factorial(7)
recursive.factorial(120)
```

5. Create a function as follows:

```
`%divisible%` <- function(x,y)
{
if (x%%y ==0) return (TRUE)
else return (FALSE)
}
10 %divisible% 3
10 %divisible% 2
`%divisible%`(10,5)
```

6. Write a function which find sum of two matrices and return the sum as matrix. (Check the size compatibility of matrix).

7. Write a function which returns nth power of a number x.

Switch Statement

1. Create a function 'summary' which calculates minimum, maximum and sum of a matrix using 'switch' statement.
2. User defined infix operator

Create a user defined infix operator to count the number of common entries in two matrices.

Example:

$$A = \begin{pmatrix} 12 & 13 & 19 \\ 14 & 15 & 21 \end{pmatrix} \quad B = \begin{pmatrix} 12 & 2 & 12 \\ 41 & 15 & 2 \end{pmatrix}$$

A %common% B will be 2