

## SESSION 3: FOUNDATIONALR PROGRAMMING

### Assignment 3

1. Define matrix mymat by replicating the sequence 1:5 for 4 times and transforming into a matrix, sum over rows and columns.

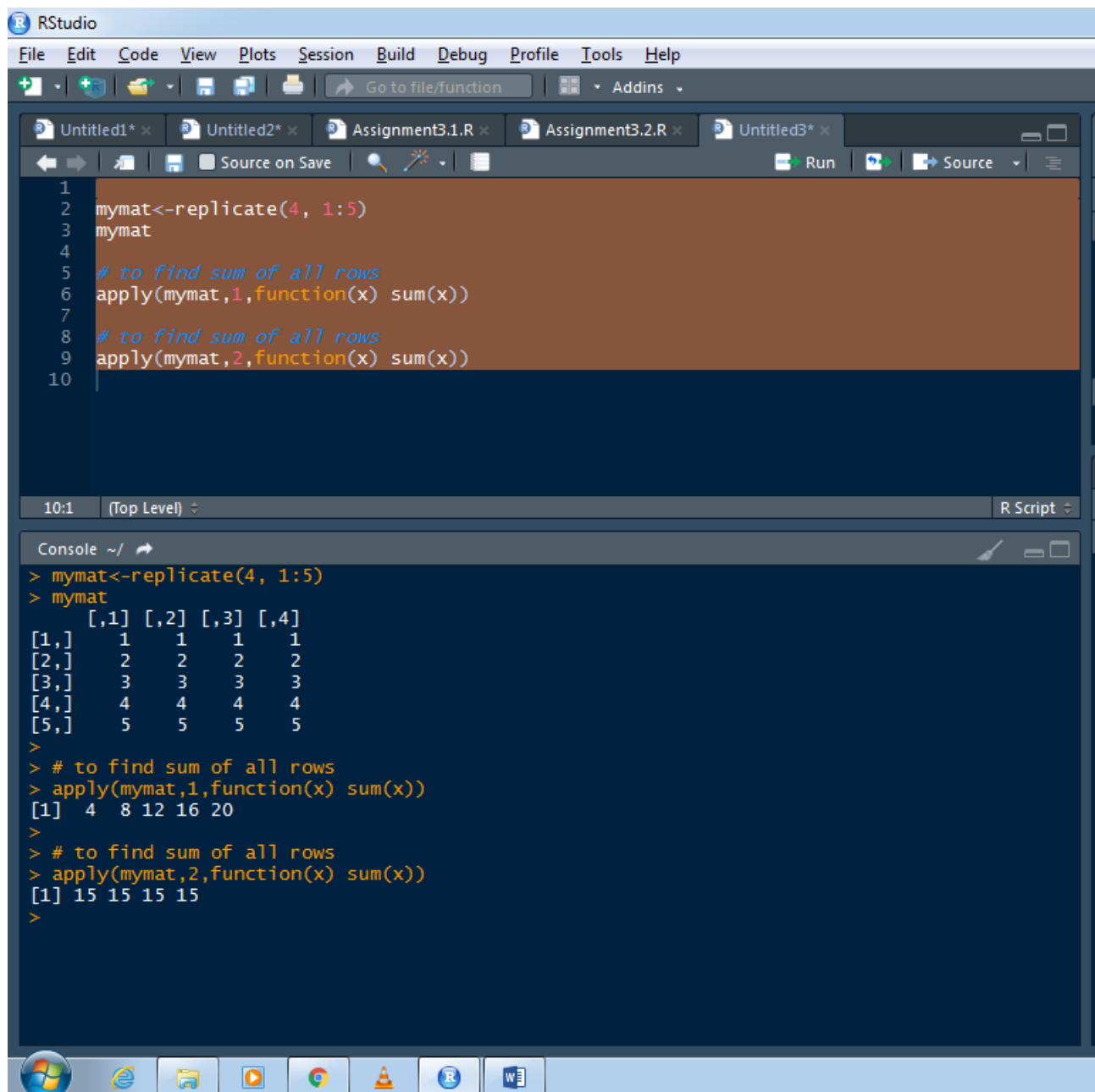
**Answer:**

```
mymat<-replicate(4, 1:5)
mymat
```

```
# to find sum of all rows
apply(mymat,1,function(x) sum(x))
```

```
# to find sum of all rows
apply(mymat,2,function(x) sum(x))
```

**Output:**



The screenshot shows the RStudio interface. The script editor contains the following code:

```
1 mymat<-replicate(4, 1:5)
2 mymat
3
4
5 # to find sum of all rows
6 apply(mymat,1,function(x) sum(x))
7
8 # to find sum of all rows
9 apply(mymat,2,function(x) sum(x))
10
```

The console shows the output of the code:

```
> mymat<-replicate(4, 1:5)
> mymat
      [,1] [,2] [,3] [,4]
[1,]    1    1    1    1
[2,]    2    2    2    2
[3,]    3    3    3    3
[4,]    4    4    4    4
[5,]    5    5    5    5
>
> # to find sum of all rows
> apply(mymat,1,function(x) sum(x))
[1]  4  8 12 16 20
>
> # to find sum of all rows
> apply(mymat,2,function(x) sum(x))
[1] 15 15 15 15
>
```