

1. Create 2 vectors A and B, where A is (1,2,3) and B is (4,5,6). With these vectors, use the `cbind()` or `rbind()` function to create a 2 by 3 matrix from the vectors. You'll need to figure out which of these binding functions is the correct choice.

```
A 1 2 3
```

```
B 4 5 6
```

```
A <- c(1,2,3)
```

```
B <- c(4,5,6)
```

```
mat <- rbind(A,B)
```

```
mat
```

2. Create a 3 by 3 matrix consisting of the numbers 1-9. Create this matrix using the shortcut 1:9 and by specifying the `nrow` argument in the `matrix()` function call. Assign this matrix to the variable *mat*

```
mat <- matrix(1:9, byrow = T, nrow = 3)
```

```
mat
```

3. Confirm that *mat* is a matrix using `is.matrix()`

Output: TRUE

```
is.matrix(mat)
```

4. Create a 5 by 5 matrix consisting of the numbers 1-25 and assign it to the variable *mat2*. The top row should be the numbers 1-5.

```
1 2 3 4 5
```

```
6 7 8 9 10
```

```
11 12 13 14 15
```

```
16 17 18 19 20
```

```
21 22 23 24 25
```

```
mat2 <- matrix(1:25, byrow = T, nrow = 5)
```

```
mat2
```

5.Using indexing notation, grab a sub-section of *mat2* from the previous exercise that looks like this:

```
[7,8]
```

```
[12,13]
```

```
mat2[2:3,2:3]
```

6.Using indexing notation, grab a sub-section of *mat2* from the previous exercise that looks like this:

Output:

```
19 20
```

```
24 25
```

```
mat2[4:5,4:5]
```

7.Using indexing notation, grab a sub-section of *mat2* from the previous exercise that looks like this:

Output:

```
19 20
```

```
24 25
```

```
mat2[4:5,4:5]
```

8.What is the sum of all the elements in *mat2*?

Output: 325

```
sum <- sum(mat2)
```

```
sum
```

9.Find out how to use `runif()` to create a 4 by 5 matrix consisting of 20 random numbers ($4 \times 5 = 20$).

```
21.03996 41.21689 51.46716 35.24451 65.69687
60.81269 81.326606 81.545300 94.459102 3.403767
72.13241 32.48194 18.74600 35.16303 90.70033
1.798345 35.558233 94.300991 17.991320 11.074018
```

```
mat.rand <- matrix(runif(20), nrow = 4)  
(mat.rand)
```