Lab - 2

1. Creating vector:

```
A <- c(1,2,3,4)
print(A)

## [1] 1 2 3 4

B <- c(5,6,7,8)
print(B)

## [1] 5 6 7 8

C <- c(A,B)
print(C)

## [1] 1 2 3 4 5 6 7 8
```

2. Sequences:

```
1:15

##  [1]  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15

seq(from=1,to=20,by=3)

## [1]  1  4  7 10 13 16 19

seq(from=1,to=10,length.out=5)

## [1]  1.00  3.25  5.50  7.75 10.00

seq(from=10,to=1,by=-2.25)

## [1] 10.00  7.75  5.50  3.25  1.00
```

3. Sequences with repeated entry:

```
rep(x=4,times=5)

## [1] 4 4 4 4 4

rep(x=c(-1,0,1.6),times=3)

## [1] -1.0  0.0  1.6 -1.0  0.0  1.6 -1.0  0.0  1.6
```

```
rep(x=c(-1,1.6),each=3)
```

```
## [1] -1.0 -1.0 -1.0  1.6  1.6  1.6
```

```
rep(x=c(1,2),times=3,each=2)
```

```
##  [1] 1 1 2 2 1 1 2 2 1 1 2 2
```

4. Length of a vector:

```
length(x=c(7,5,9,2))
```

```
## [1] 4
```

```
length(x=2:11)
```

```
## [1] 10
```

5. Extracting element from a vector:

```
vec1 <- c(-3,-2,-1,0,2,4,6,8,10)
vec1[1]
```

```
## [1] -3
```

```
vec1[3]
```

```
## [1] -1
```

```
vec1[length(x=vec1)]
```

```
## [1] 10
```

```
vec1[3:5]
```

```
## [1] -1  0  2
```

```
vec1[-1]
```

```
## [1] -2 -1  0  2  4  6  8 10
```

```
vec1[-length(x=vec1)]
```

```
## [1] -3 -2 -1  0  2  4  6  8
```

6. Element-wise behavior of vector:

```
vec2 <- c(3,22,-10,0,21,14,6.9,3.8,-10.3)
3*vec2
```

```
## [1]   9.0  66.0 -30.0   0.0  63.0  42.0  20.7  11.4 -30.9
```

```
vec1-vec2
```

```
## [1]  -6.0 -24.0   9.0   0.0 -19.0 -10.0  -0.9   4.2  20.3
```

```
vec2*c(1,-1)
```

```
## Warning in vec2 * c(1, -1): longer object length is not a multiple of shorter
object length
```

```
## [1]   3.0 -22.0 -10.0   0.0  21.0 -14.0   6.9  -3.8 -10.3
```

```
sum(vec2)
```

```
## [1] 50.4
```

```
prod(vec2)
```

```
## [1] 0
```

7. Sorting a vector:

```
A<-c(1,-1,3,7,9,0,2,5)
sort(x=A,decreasing = TRUE)
```

```
## [1]  9  7  5  3  2  1  0 -1
```