

## Exercise 1

**Consider a vector:**

```
x <- c(4,6,5,7,10,9,4,15)
```

**What is the value of:**

```
c(4,6,5,7,10,9,4,15) < 7
```

- a. TRUE, FALSE, TRUE, FALSE, FALSE, FALSE, TRUE, FALSE
- b. TRUE, TRUE, TRUE, FALSE, FALSE, FALSE, TRUE, FALSE
- c. FALSE, TRUE, TRUE, FALSE, FALSE, FALSE, TRUE, FALSE
- d. TRUE, TRUE, TRUE, TRUE, TRUE, FALSE, TRUE, FALSE
- e. TRUE, TRUE, TRUE, FALSE, FALSE, FALSE, TRUE, FALSE

## Exercise 2

**Consider two vectors:**

```
p <- c(3, 5, 6, 8)
```

and

```
q <- c(3, 3, 3)
```

**What is the value of:**

```
p+q
```

- a. 6, 8, 6, 8
- b. 6, 8, 0, 0
- c. 6, 8, NA, NA
- d. 3, 5, 6, 8 Warning message: In p+q : longer object length is not a multiple of shorter object length
- e. 6, 8, 9, 11

## Exercise 3

**Consider two vectors**

```
a = c(1,3,4,7,10,0)
```

```
b = c(1,2)
```

**what is the value of a+b ?**

## Exercise 4

**If**

```
z <- 0:9
```

**then what is the output from the following R-statements:**

```
digits <- as.character(z)
```

as.integer(digits)

- a. Error in subset. object 'z' not found
- b. 0, 1, 2, 3, 4, 5, 6, 7, 8, 9
- c. "NA", "NA", "NA", "NA", "NA", "NA", "NA", "NA", "NA"
- d. "0", "1", "2", "3", "4", "5", "6", "7", "8", "9"
- e. 0, 0, 0, 0, 0, 0, 0, 0, 0

## Exercise 5

Consider the vector:

```
x <- c(1,2,3,4)
```

What is the value of k for:

```
(x+2)[(!is.na(x)) & x > 0] -> k
```

- a. 1, 2, 3, 4
- b. 1, 4, 9, 16
- c. Error: object 'k' not found
- d. 3, 4, 5, 6
- e. numeric(0)

## Exercise 6

Consider the following vectors:

```
s = c("a","b",'c',"d","e")
```

```
t = c("f","g","h","i","j")
```

What is the value of s+3 ?

What command would you use to combine them into a single vector in alphabetical order?

## Exercise 7

Consider the following vectors:

```
s = c("a","b",'c',"d","e")
```

```
v = 1:5
```

if:

```
z = c(s,v)
```

What is the value of z[5:10] ?

- a. 1,2,3,4,5
- b. "a","b","c","d","e"
- c. "1","2","3","4","5"

d. “e”, “1”, “2”, “3”, “4”