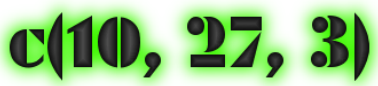
Vector exercises



A vector is a simple data structure in R. You will use it frequently, often as a building block of more complex data structures and operations on those structures. Before proceeding, please follow our short tutorial and review Chapter 2 of An Introduction to R. First, write down your answer, without using R and without looking at the answer options. Then, match the answer you wrote down with one of the choices given. Finally, check your answer using R.

Solutions are available here.

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

If:

```
Age <- c(22, 25, 18, 20)
Name <- c("James", "Mathew", "Olivia", "Stella")
Gender <- c("M", "M", "F", "F")
```

then what is the R-code for getting the following output;

```
##   Age   Name Gender
## 1  22  James      M
## 2  25 Mathew      M
```

a.

```
DataFrame = data.frame(c(Age), c(Name), c(Gender))
subset(DataFrame, Gender == "M")
```

b.

```
DataFrame = data.frame(c(Age),c(Name),c(Gender))
subset(Gender=="M"), eval=FALSE
```

c.

```
DataFrame = data.frame(Age,Name,Gender)
subset(DataFrame,Gender=="M")
```

d.

```
DataFrame = data.frame(c(Age,Name,Gender))
subset(DataFrame,Gender=="M")
```

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

Learn more about vectors in the online course R Programming A-Z™: R For Data Science With Real Exercises! This course had more than 68,000 students enrolled already and does not require prior knowledge of R.

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 AirPassenger data set

```
data(AirPassengers)
```

Which statement will produce the following output?

```
##  [1] 112 118 132 129 121 135 148 148 136 119 104 118
```

a. `AirPassengers[time(AirPassengers) >= 1949 & time(AirPassengers) < 1950, 12]`

b. `AirPassengers[AirPassengers >= 1949 & AirPassengers < 1950]`

c. `AirPassengers[time(AirPassengers) >= 1949 & time(AirPassengers) < 1950]`

d. `AirPassengers[AirPassengers >= 1949 & AirPassengers < 1950, 12]`

e. `c[[1]]`

Exercise 7

If

```
x <- c(2, 4, 6, 8)
```

and

```
y <- c(TRUE, TRUE, FALSE, TRUE)
```

What is the value of:

```
sum(x[y])
```

a. 20

b. 8

c. 14

d. NA

Exercise 8

Consider the vector:

```
x <- c(34, 56, 55, 87, NA, 4, 77, NA, 21, NA, 39)
```

Which R-statement will count the number of NA values in x?

a. count(is.na(X))

b. length(is.na(x))

c. sum(is.na(x))

d. count(!is.na(x))

e. sum(!is.na(x))

Want to practice vectors a bit more? We have more exercise sets on this topic here.