

Week 1 Quiz

[Help](#)

Warning: The hard deadline has passed. You can attempt it, but **you will not get credit for it**. You are welcome to try it as a learning exercise.

Introduction

This first quiz will check your ability to execute basic operations on objects in R and to understand some basic concepts. For questions 11–20 you will need to load a dataset into R and do some basic manipulations in order to answer the questions on the quiz.

You may want to print a copy of the quiz questions to look at as you work on the assignment. It is recommended that you save your answers as you go in the event that a technical problem should occur with your network connection or computer. Ultimately, you must submit the quiz online to get credit!

Data

The zip file containing the data for questions 11–20 in this Quiz can be downloaded here:

- [Week 1 Quiz Data](#)

For this assignment you will need to unzip this file in your working directory.

☐ In accordance with the Coursera Honor Code, I (Juan) certify that the answers here are my own work.

Question 1

R was developed by statisticians working at

- ☒ The University of Auckland
- ☐ Bell Labs
- ☐ StatSci

☐ Harvard University

Question 2

The definition of free software consists of four freedoms (freedoms 0 through 3). Which of the following is NOT one of the freedoms that are part of the definition?

- ☐ The freedom to run the program, for any purpose.
- ☐ The freedom to improve the program, and release your improvements to the public, so that the whole community benefits.
- ☒ The freedom to restrict access to the source code for the software.
- ☐ The freedom to redistribute copies so you can help your neighbor.

Question 3

In R the following are all atomic data types EXCEPT

- ☐ numeric
- ☒ table
- ☐ character
- ☐ complex

Question 4

If I execute the expression `x <- 4` in R, what is the class of the object `'x'` as determined by the `'class()'` function?

- ☐ vector
- ☐ real
- ☐ list
- ☒ numeric

Question 5

What is the class of the object defined by `x <- c(4, TRUE)`?

- ☐ matrix
- ☒ numeric
- ☐ logical
- ☐ list

Question 6

If I have two vectors `x <- c(1,3, 5)` and `y <- c(3, 2, 10)`, what is produced by the expression `cbind(x, y)`?

- ☐ a vector of length 3
- ☒ a numeric matrix with 3 rows and 2 columns
- ☐ a vector of length 2
- ☐ a 2 by 2 matrix

Question 7

A key property of vectors in R is that

- ☐ elements of a vector can only be character or numeric
- ☐ a vector cannot have attributes like dimensions
- ☐ elements of a vector can be of different classes
- ☒ elements of a vector all must be of the same class

Question 8

Suppose I have a list defined as `x <- list(2, "a", "b", TRUE)`. What does `x[[1]]` give me?

- ☐ a character vector containing the element "2".
- ☒ a numeric vector containing the element 2.
- ☐ a list containing the letter "a".
- ☐ a list containing the number 2.

Question 9

Suppose I have a vector `x <- 1:4` and a vector `y <- 2`. What is produced by the expression `x + y`?

- ☐ an integer vector with elements 3, 2, 3, 6.
- ☒ a numeric vector with elements 3, 4, 5, 6.
- ☐ an integer vector with elements 3, 2, 3, 4.
- ☐ a numeric vector with elements 3, 2, 3, 4.

Question 10

Suppose I have a vector `x <- c(17, 14, 4, 5, 13, 12, 10)` and I want to set all elements of this vector that are greater than 10 to be equal to 4. What R code achieves this?

- ☐ `x[x > 10] == 4`
- ☐ `x[x >= 11] <- 4`
- ☐ `x[x > 4] <- 10`
- ☒ `x[x >= 10] <- 4`

Question 11

In the dataset provided for this Quiz, what are the column names of the dataset?

- ☒ Ozone, Solar.R, Wind, Temp, Month, Day
- ☐ Ozone, Solar.R, Wind

- ☐ Month, Day, Temp, Wind
- ☐ 1, 2, 3, 4, 5, 6

Question 12

Extract the first 2 rows of the data frame and print them to the console. What does the output look like?

☒

| | Ozone | Solar.R | Wind | Temp | Month | Day |
|---|-------|---------|------|------|-------|-----|
| 1 | 41 | 190 | 7.4 | 67 | 5 | 1 |
| 2 | 36 | 118 | 8.0 | 72 | 5 | 2 |

☐

| | Ozone | Solar.R | Wind | Temp | Month | Day |
|---|-------|---------|------|------|-------|-----|
| 1 | 18 | 224 | 13.8 | 67 | 9 | 17 |
| 2 | NA | 258 | 9.7 | 81 | 7 | 22 |

☐

| | Ozone | Solar.R | Wind | Temp | Month | Day |
|---|-------|---------|------|------|-------|-----|
| 1 | 9 | 24 | 10.9 | 71 | 9 | 14 |
| 2 | 18 | 131 | 8.0 | 76 | 9 | 29 |

☐

| | Ozone | Solar.R | Wind | Temp | Month | Day |
|---|-------|---------|------|------|-------|-----|
| 1 | 7 | NA | 6.9 | 74 | 5 | 11 |
| 2 | 35 | 274 | 10.3 | 82 | 7 | 17 |

Question 13

How many observations (i.e. rows) are in this data frame?

- ☐ 160
- ☒ 153
- ☐ 45
- ☐ 129

Question 14

Extract the *last* 2 rows of the data frame and print them to the console. What does the output look like?

- ☒

| | Ozone | Solar.R | Wind | Temp | Month | Day |
|-----|-------|---------|------|------|-------|-----|
| 152 | 18 | 131 | 8.0 | 76 | 9 | 29 |
| 153 | 20 | 223 | 11.5 | 68 | 9 | 30 |
- ☐

| | Ozone | Solar.R | Wind | Temp | Month | Day |
|-----|-------|---------|------|------|-------|-----|
| 152 | 34 | 307 | 12.0 | 66 | 5 | 17 |
| 153 | 13 | 27 | 10.3 | 76 | 9 | 18 |
- ☐

| | Ozone | Solar.R | Wind | Temp | Month | Day |
|-----|-------|---------|------|------|-------|-----|
| 152 | 11 | 44 | 9.7 | 62 | 5 | 20 |
| 153 | 108 | 223 | 8.0 | 85 | 7 | 25 |
- ☐

| | Ozone | Solar.R | Wind | Temp | Month | Day |
|-----|-------|---------|------|------|-------|-----|
| 152 | 31 | 244 | 10.9 | 78 | 8 | 19 |
| 153 | 29 | 127 | 9.7 | 82 | 6 | 7 |

Question 15

What is the value of Ozone in the 47th row?

- ☒ 21
- ☐ 18
- ☐ 34
- ☐ 63

Question 16

How many missing values are in the Ozone column of this data frame?

- ☐ 78
- ☐ 9
- ☐ 43
- ☒ 37

Question 17

What is the mean of the Ozone column in this dataset? Exclude missing values (coded as NA) from this calculation.

- ☐ 31.5
- ☐ 18.0
- ☐ 53.2
- ☒ 42.1

Question 18

Extract the subset of rows of the data frame where Ozone values are above 31 and Temp values are above 90. What is the mean of Solar.R in this subset?

- ☐ 185.9
- ☐ 334.0
- ☒ 212.8
- ☐ 205.0

Question 19

What is the mean of "Temp" when "Month" is equal to 6?

- ☒ 79.1

- ☐ 85.6
- ☐ 75.3
- ☐ 90.2

Question 20

What was the maximum ozone value in the month of May (i.e. Month = 5)?

- ☐ 100
- ☐ 97
- ☒ 115
- ☐ 18

☐ In accordance with the Coursera Honor Code, I (Juan) certify that the answers here are my own work.

Submit Answers

Save Answers

You cannot submit your work until you agree to the Honor Code. Thanks!