

## Week 1 Quiz

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The **hard deadline** for this quiz is **Fri 15 May 2015 4:30 PM PDT**.

### 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 (pakpoom subsoontorn) certify that the answers here are my own work. **Thank you!**

### Question 1

The R language is a dialect of which of the following programming languages?

- ☐ C
- ☐ Lisp
- ☐ Fortran
- ☒ S

### 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 study how the program works, and adapt it to your needs.
- ☐ The freedom to improve the program, and release your improvements to the public, so that the whole community benefits.
- ☒ The freedom to prevent users from using the software for undesirable purposes.

### Question 3

In R the following are all atomic data types EXCEPT

- ☒ array
- ☐ numeric
- ☐ character
- ☐ logical

### Question 4

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

- ☐ integer
- ☐ matrix
- ☐ character
- ☒ complex

### Question 5

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

- ☐ integer
- ☐ character
- ☐ logical

- ☒ numeric

## Question 6

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

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

## Question 7

A key property of vectors in R is that

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

## Question 8

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

- ☐ a list containing character vector with the letter "a".
- ☐ a list containing the number 2 and the letter "a".
- ☒ a character vector of length 1.
- ☐ a list containing a character vector with the elements "a" and "b".

## Question 9

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

- ☒ a numeric vector with elements 3, 4, 5, 6.

- ☐ an integer vector with elements 3, 2, 3, 4.
- ☐ a numeric vector with elements 1, 2, 3, 6.
- ☐ an integer vector with elements 3, 2, 3, 6.

## 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 > 10] <- 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
- ☐ Month, Day, Temp, Wind
- ☐ 1, 2, 3, 4, 5, 6
- ☐ Ozone, Solar.R, Wind

## 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	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



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

## Question 13

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

☐ 129☒ 153☐ 160☐ 45

## 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	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



	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

## Question 15

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

- ☒ 21
- ☐ 63
- ☐ 18
- ☐ 34

## Question 16

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

- ☐ 43
- ☒ 37
- ☐ 9
- ☐ 78

## Question 17

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

- ☐ 18.0
- ☒ 42.1
- ☐ 31.5
- ☐ 53.2

## 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
- ☒ 212.8
- ☐ 334.0
- ☐ 205.0

## Question 19

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

- ☒ 79.1
- ☐ 90.2
- ☐ 75.3
- ☐ 85.6

## Question 20

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

- ☒ 115
- ☐ 97
- ☐ 100
- ☐ 18

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