Close

Week 1 Quiz

20 questions

1.

R was developed by statisticians working at



Johns Hopkins University



The University of Auckland



Insightful



StatSci

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? Select all that apply.



The freedom to improve the program, and release your improvements to the public, so that the whole community benefits.



The freedom to sell the software for any price.



The freedom to restrict access to the source code for the software.



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 prevent users from using the software for undesirable purposes.



The freedom to redistribute copies so you can help your neighbor.

3.

In R the following are all atomic data types EXCEPT: (Select all that apply)



character



complex



integer



logical



table



data frame



matrix



list



numeric



array

4.

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



complex



numeric



integer



matrix



character



logical

5.

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



character



mixed



numeric



integer



logical

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 3 by 3 matrix



a vector of length 2



a vector of length 3



a matrix with 2 columns and 3 rows



a 2 by 3 matrix



a 2 by 2 matrix

7.

A key property of vectors in R is that



a vector cannot have have attributes like dimensions



elements of a vector all must be of the same class



elements of a vector can be of different classes



elements of a vector can only be character or numeric



the length of a vector must be less than 32,768

8.

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



a character vector containing the element "2".



a list containing the number 2.



a list containing a numeric vector of length 1.



a numeric vector of length 1.



a numeric vector containing the element 2.

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, 4.



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



an integer vector with elements 3, 2, 3, 6.



a numeric vector with elements 3, 2, 3, 6.



a numeric vector with elements 1, 2, 3, 6.



a numeric vector with elements 3, 2, 3, 4.

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? Select all that apply.



x[x == 10] <- 4



x[x > 4] <- 10



x[x > 10] <- 4



x[x == 4] > 10



x[x >= 11] <- 4



x[x < 10] <- 4



x[x >= 10] <- 4



x[x > 10] == 4

x[x >= 11] <- 4

11.

Use the [Week 1 Quiz Data Set](https://d396qusza40orc.cloudfront.net/rprog/data/quiz1_data.zip) to answer questions 11-20.

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



Month, Day, Temp, Wind



Ozone, Solar.R, Wind



1, 2, 3, 4, 5, 6



Ozone, Solar.R, Wind, Temp, Month, Day

12.

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

> data <-read.csv("hw1\_data.csv")

> data[c(1:2),]

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 7 NA 6.9 74 5 11

2 35 274 10.3 82 7 17



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 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

13.

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



129



160



153



45

> nrow (data)

[1] 153

14.

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

> data[c(152:153),]

Ozone Solar.R Wind Temp Month Day

152 18 131 8.0 76 9 29

153 20 223 11.5 68 9 30

OR

data[c(nrow(data)-1, nrow(data)),]

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



Ozone Solar.R Wind Temp Month Day

152 18 131 8.0 76 9 29

153 20 223 11.5 68 9 30

15.

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

> data[c(47),]

Ozone Solar.R Wind Temp Month Day

47 21 191 14.9 77 6 16



18



21



34



63

16.

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

> table(factor(is.na(c(data$Ozone))))[2]

TRUE

37



78



43



9



37

17.

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

> mean(data$Ozone[!is.na(data$Ozone)])

[1] 42.12931



31.5



42.1



53.2



18.0

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?



334.0



205.0



212.8



185.9

> good <- complete.cases(data$Ozone, data$Solar.R, data$Temp)

> mean(data$Solar.R[good & data$Ozone > 31 & data$Temp > 90])

[1] 212.8

19.

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



90.2



79.1



85.6



75.3

good <- complete.cases(data$Month, data$Temp)

mean(data$Temp[good & data$Month == 6])

79.1

Can be done in Excel- filter on column temp = 6 and then sum all rows and divide by total number of rows

20.

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



115



18



97



100

max(data$Ozone[data$Month==5 & !is.na(data$Ozone)])

115

Done in excel by applying filter and ascending all values in Ozone field.

13 questions unanswered

Submit Quiz