

Week 1 Quiz

20 questions

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1.

R was developed by statisticians working at

- ☐ The University of New South Wales
- ☐ Harvard University
- ☐ The University of Auckland
- ☒ Bell Labs

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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 prevent users from using the software for undesirable purposes.
- ☐ The freedom to redistribute copies so you can help your neighbor.
- ☐ The freedom to study how the program works, and adapt it to your needs.
- ☐ The freedom to run the program, for any purpose.
- ☒ The freedom to restrict access to the source code for the software.
- ☒



The freedom to sell the software for any price.

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3.

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

- ☒ list
 - ☒ table
 - ☐ logical
 - ☐ character
 - ☒ matrix
 - ☐ integer
 - ☒ data frame
 - ☐ complex
 - ☒ array
 - ☐ numeric
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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
 - ☐ numeric
 - ☐ logical
 - ☐ complex
 - ☐ matrix
 - ☐ character
-

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5.

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

- ☐ list
 - ☐ integer
 - ☐ character
 - ☒ numeric
 - ☐ matrix
 - ☐ logical
-

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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 2 by 2 matrix
 - ☐ a vector of length 3
 - ☐ a 3 by 3 matrix
 - ☐ a vector of length 2
 - ☐ a 3 by 2 matrix
 - ☒ a matrix with two rows and three columns
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7.

A key property of vectors in R is that

- ☐ a vector cannot have have attributes like dimensions
- ☐ elements of a vector can only be character or numeric
- ☐ elements of a vector can be of different classes

- ☒ elements of a vector all must be of the same class
 - ☐ the length of a vector must be less than 32,768
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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 numeric vector containing the element 2.
 - ☐ a character vector containing the element "2".
 - ☒ a numeric vector of length 1.
 - ☐ a list containing a numeric vector of length 1.
 - ☐ a list containing the number 2.
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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, 2, 3, 6.
 - ☐ a numeric vector with elements 1, 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.
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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 > 10] <- 4`
- ☐ `x[x >= 10] <- 4`
- ☒ `x[x >= 11] <- 4`
- ☐ `x[x == 4] > 10`
- ☐ `x[x < 10] <- 4`

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11.

Use the Week 1 Quiz Data Set to answer questions 11-20.

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

- ☒ Ozone, Solar.R, Wind, Temp, Month, Day
- ☐ 1, 2, 3, 4, 5, 6
- ☐ Ozone, Solar.R, Wind
- ☐ Month, Day, Temp, Wind

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12.

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

☒

	1	Ozone	Solar.R	Wind	Temp	Month	Day
2	1	18	224	13.8	67	9	17
3	2	NA	258	9.7	81	7	22

☐

1	Ozone	Solar.R	Wind	Temp	Month	Day
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2	1	9	24	10.9	71	9	14
3	2	18	131	8.0	76	9	29



		Ozone	Solar.R	Wind	Temp	Month	Day
2	1	41	190	7.4	67	5	1
3	2	36	118	8.0	72	5	2



		Ozone	Solar.R	Wind	Temp	Month	Day
2	1	7	NA	6.9	74	5	11
3	2	35	274	10.3	82	7	17

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13.

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



129



160



45



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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
2	152	18	131	8.0	76	9	29
3	153	20	223	11.5	68	9	30



		Ozone	Solar.R	Wind	Temp	Month	Day
2	152	31	244	10.9	78	8	19
3	153	29	127	9.7	82	6	7



		Ozone	Solar.R	Wind	Temp	Month	Day
2	152	11	44	9.7	62	5	20
3	153	108	223	8.0	85	7	25



		Ozone	Solar.R	Wind	Temp	Month	Day
2	152	34	307	12.0	66	5	17
3	153	13	27	10.3	76	9	18

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15.

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

- ☐ 34
- ☐ 18
- ☒ 21
- ☐ 63

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16.

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

- ☐ 9
- ☒ 37
- ☐ 43
- ☐ 78

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17.

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

- ☐ 53.2
- ☐ 31.5
- ☐ 18.0
- ☒ 42.1

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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
 - ☐ 205.0
 - ☒ 212.8
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19.

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

- ☐ 75.3
 - ☒ 79.1
 - ☐ 85.6
 - ☐ 90.2
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20.

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

- ☐ 100
 - ☐ 97
 - ☒ 115
 - ☐ 18
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