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Eco 634
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ECo 634 Lab 1: R Fundamentals 1

Q1: Explain why the outputs of the two lines are different.

They are different because the output for line one are integers or numerics and the output for line two are a string of characters due to the quotation marks.

Q2: Is c_1 a variable, or a function?

Variable

Q3: Is c_2 a variable, or a function?

Variable

Q4: If c_1 and c_2 have different values, why?

They have different values because c_1 is a numeric input and c_2 is a character input.

Q5: What are the dimensions of the matrix (i.e. how many rows and columns)?

There is 1 column and 3 rows of this matrix.

Q6: Write R code to retrieve the element of mat_1 that has a value of 3.

```
mat_1 == 3
```

Q7: Paste the code you used to create mat_2.

```
mat_2=matrix(my_vec,nrow=2,ncol=3,byrow=TRUE)
```

Q8: Paste the code you used to create mat_3.

```
mat_3=matrix(my_vec,nrow=3,ncol=2,byrow=TRUE)
```

Q9: Did R use rows or columns to recycle the values in my_vec?

Rows

Q10: Create a matrix, mat_4, with a number of elements that is not a multiple of 3 and paste the code into the editor.

```
mat_4=matrix(my_vec,nrow=7,ncol=5,byrow=TRUE)
```

Q11: How did R handle the recycling of values of my_vec in mat_4?

It sent a warning message saying:

In matrix(my_vec, nrow = 7, ncol = 5) : data length [3] is not a sub-multiple or multiple of the number of rows [7].

Q12: For each of the 8 lines, answer the following:

A. Did the line return a 1: value, 2: error, or 3: NULL

Line 1: value
Line 2: value
Line 3: NULL
Line 4: value
Line 5: value
Line 6: value
Line 7: error
Line 8: NULL

B. If it did not return an error, what type of subsetting operation was used?

Line 1: position
Line 2: position
Line 3: name
Line 4: name
Line 5: name
Line 6: name
Line 8: name

C. If it did not return an error, explain how R chose which element to retrieve.

Line 1: It retrieved the first element in the list.

Line 2: It retrieved the first element in the list due to as.numeric converting "1" to a numeric value.

Line 3: It looked for the component with the name "1".

Line 4: It retrieved the list item named "one".

Line 5: It retrieved the list item named "one".

Line 6: It retrieved the list item named "one" as well, even though this one has quotations.

Line 8: It looked for the component with the name "1".

Q13: Identify which lines produced output "five point two" and explain why.

Line 4: `my_list_1[["one"]]`, Line 5: `my_list_1$one`, and Line 6: `my_list_1$"one"`.

They produce the output "five point two" because it's connected to the name of the element "one", which is element 2 from `my_list_1`.

Q14: Identify which lines produced NULL output and explain why.

Line 3: `my_list_1[["1"]]` and Line 8: `my_list_1$"1"`. They produced NULL because "1" is not an element that is found in the data of `my_list_1`.