

## Lab 1

- 1) The outputs of the two lines are different because the second line (one with quotes) R is reading it as text, the quotes create a string. The first line (without quotes) is being read as integers, so it just reprints the numbers in the line.
- 2) C\_1 would be a variable because it is storing the values 1,2,3 in c\_1.
- 3) C\_2 would be a variable because it is storing the values "1,2,3" in c\_2.
- 4) C\_1 and C\_2 have different values because c\_1 is being read as integers and c\_2 as text
- 5) The dimensions of this matrix are 3 rows and 2 columns

mat_1 ×			
	←	→	Filter
	▲	V1	V2
	1	1	4
	2	2	5
	3	3	6

- 6) `mat_1[3,1]`
- 7) `mat_2 = matrix(my_vec, nrow = 2, ncol = 3)`
- 8) `mat_3 = matrix(my_vec, nrow = 3, ncol = 2)`
- 9) R used columns to recycle/distribute the values in my\_vec.

	▲	V1	V2
	1	1	5
	2	2	6
	3	3	7
	4	4	8

- 10) `mat_4 = c(my_vec, 7, 8)`  
`mat_4 = matrix(mat_4, nrow = 4, ncol = 2)`
- 11) R handled it well when I started doing the correct way. It kept telling me the matrix only had 6 values until I added the 7 and 8 value to the my\_vec in the first line shown about. After creating the matrix was like the previous steps and it recycled the values in the way I asked.
- 12) Line 1: 5.2 Subsetting used: double square brackets `[[ ]]`. This function told R to select value of the first element.  
 Line 2: 5.2 subsetting used: double square brackets `[[ ]]`. The `"1"` in the code told R to read 1 as a text and to gives its value as a numeric. The value was stored in 1 so R was able to read it.  
 Line 3: NULL subsetting used: double square brackets `[[ ]]`. This produced null because the `"1"` made R produce the equivalent value of 1 not actual or simplified. The equivalent to this would be 1 not one.  
 Line 4: "five point two" subsetting used: double square brackets `[[ ]]`. The "one" in the brackets told it to read it as the text version of the one value so it selects the value stored to "one"  
 Line 5: "five point two" subsetting used: `$` like number 4 it selects the one value as a text.  
 Line 6: "five point two" subsetting used: `$` R used it to select the text one, so it produced the value stored in "one"

Line 7: Error: unexpected numeric constant in "my\_list\_1\$1" subsetting used: \$

Line 8: NULL subsetting used: \$ R like line 3 told it to read 1 as a text not numeric and there was no text as 1 in the code.

13) Lines 4, 5, and 6 produced "five point two". They did this because they called on the "one" variable inside the list I created.

14) Lines 3 and 8 produced NULL, both lines produced the NULL value because the line it tells R to read the value of 1 as a text because of the "". This is reading the number 1 as a text and there is no text of 1 in the original code, so it threw the NULL.