PBIO 394 Exercises Week 1.

Due by end of day on 27 Jan 2021
Email your .R file to brian.beckage@uvm.edu with name as
'pbio394_yourLastName_ex1.R' and email header 'pbio394 yourLastName Ex1'.

Below are a series of short exercises to become familiar with the basics of R.

1. Create a vector that is a sequence of from 1 to 100 and that is of length 200.
2. Multiply each element in this list by 2 and find the sum of the resulting vector.
3. Square each element of this vector and find the summation of this transformed vector.
4. Select all elements of the transformed vector (from above) that are less than 50.
5. Create a 3 (rows) by 4 (cols) matrix of values 1:12
6. Multiple the component at the location [2,3] and the component at [3,2].
7. Name the rows (a,b,c) and the columns (1,2,3,4).
8. Create a 3 dimensional array that replicates the matrix created above three times in the 3rd dimension. Name the dimensions of the array.
9. Multiply the 2nd row of the 2 dimension by the [3,3] element of the 3rd dimension.
10. Create a vector of 1,2 replicated to length 10.
11. Create a vector of integers 1 to 10 and then create vectors that are the square and cube of that vector.
12. Create a data frame that combines these three vectors into the columns of a dataframe.
13. Name the columns of the data frame as: 'Original', 'Squared', and 'Cubed'.
14. Plot the original vs cubed columns.