DUE: September 17th at 11:59 PM

QMM 1001 - Statistics for Data Analytics
Lab 1 /23

Create and submit an R script which, when run, will print the answers to the following questions. Your R script must include the following title, filled in with your name and student number.

```
"
**********************************************************************
Name:
Student Number:

QMM 1001 Lab 1
**********************************************************************
"
```

You must also number each question in your R Script using comments.

```
#############
#Question #1
#############
```

Use comments to answer questions that required an explanation. For example, Question 2 requires you to state which digit is missing and can be answered using comments in the following manner:

```
######The missing digit is…
```

Please download the R Script "Last_Name, First_Name LAB 1" from Moodle as a template to use for your first lab.

1. **(1 mark)** Set the number of digits displayed to 16.
2. **(2 marks)** Calculate the value of 2 to the 29th power. Note interestingly that this number had all digits from 0 to 9 except for one. Which digit is missing?
3. **(2 marks)** Calculate $1 - [(1 - 0.40)(1 - 0.25)(1 - 0.05)]$
4. **(2 marks)** Calculate $1000\left(\frac{(1+0.03)^{24}-1}{0.03}\right)$

5. a) **(1 mark)** Choose any number from 1 to 20 and assign it to an object, a. Print the object (i.e. type into the command line and hit enter).

   b) **(2 marks)** Create an object b by doubling the value of a, adding 10, and dividing by 2. Make sure to follow the correct order of operations. Print the object b.

   c) **(1 mark)** Create a new object c with the value b – a. Print c.

6. a) **(1 mark)** Create a vector, x, of the digits 20 through 50.

   b) **(1 mark)** Create a vector, y, of the digits 30 through 60.

   c) **(1 mark)** Create a vector, z, and give it the value x + y.

   d) **(1 mark)** Print the first value of z.

   e) **(1 mark)** Print the last value of z.

   f) **(1 mark)** Create a new vector, w, that contains the second, fourth, sixth, and eighth entries of z.

   g) **(1 mark)** Remove the value 102 from z.

7. a) **(1 mark)** Create a vector, thousand, of the digits 1 to 1000.

   b) **(1 mark)** Create an object called sample_1 by selecting a simple random sample of 50 values from the vector thousand.

   c) **(1 marks)** Create an object called sample_2 by selecting a second simple random sample of 50 values from the vector thousand.

   d) **(2 marks)** Search for help on the function head. Find the first seven elements of sample_1 and sample_2 using the head function. Are the two samples the same?

Save your R Script as: Last Name, First Name LAB 1

Upload your R Script to the "R Assignment – Lab 1" dropbox on Moodle before September 17th at 11:59 PM.