DS 413/613 CLASSWORK/LAB **Functions**

Instructions: Email your code and work (coding and output) by generating an Rmardown File and the default Word File.

1) In three or four sentences, explain why constructing a Function . in order to execute tasks, is beneficial or advantageous

2)

Write a function (using r code and structure demonstrated in class) to calculate a z score for a given observed value, a mean, and a standard deviation value. And then use your function to find a z score for the following problem. (Research the internet to find the formula used to calculate a z score)

Observed value = 25.77, mean = 23.54, standard deviation = 2.442

library(tidyverse)

z\_score <- function(v, m, s) {

v-m/s

}

z\_score(25.77,23.54,2.442)

3)

Write a function (using r code and the structure demonstrated in class) to calculate the natural log of a number multiplied by the common log of the same number divided by the cube root of a given prime number.

Use your function to find the answer if the number to be used for both log expressions is 32 and the given prime number is 11.

y <- function(gn,pn){

result = (log(gn)\*log10(gn))/(pn^(1/3))

return(round(result, digits = 2))

}

Also use R code to round your answer to the nearest tenth

4)

Use and show R coding to calculate the standard deviation for each variable of the data table **mtcars** using the **“Special For Loop Method”** demonstrated in the class notes.

output2 <- vector("double", ncol(mtcars)) # 1. output

for (i in seq\_along(mtcars)) { # 2. sequence

output2[[i]] <- sd(mtcars[[i]]) # 3. body

#output3[[i]] <- mean(mtcars[[i]])

}

output2