**NAME**

**COLLEGE NUMBER**

#Loads the package library for grouping charts together

> library(cluster)

# Load the library tidyverse that comes along with graph ploting packages

 > library(tidyverse)

-- Attaching packages ------------------------------------------------------ tidyverse 1.3.1 --

v ggplot2 3.3.5     v purrr   0.3.4

v tibble  3.1.2     v dplyr   1.0.7

v tidyr   1.1.4     v stringr 1.4.0

v readr   2.0.2     v forcats 0.5.1

-- Conflicts --------------------------------------------------------- tidyverse\_conflicts() --

x dplyr::filter() masks stats::filter()

x dplyr::lag()    masks stats::lag()

Warning messages: #Should be ignored they show the versions of packages that are readily available

1: package ‘tidyverse’ was built under R version 4.1.1

2: package ‘tidyr’ was built under R version 4.1.1

3: package ‘readr’ was built under R version 4.1.1

4: package ‘purrr’ was built under R version 4.1.1

5: package ‘dplyr’ was built under R version 4.1.1

6: package ‘stringr’ was built under R version 4.1.1

7: package ‘forcats’ was built under R version 4.1.1

>

#In order to compute the K mean clusters using the Kmeans model,

#create a variable called w and assign it a function called k which takes

#the methods of df1, and function ntart that deafines the 1st boundery 10;

#where the 10 deifines  the first 10 generated configurations

#which also takes the variable as total within clusters defined by function $tot.withinss

w <- function(k) {

  kmeans(df1, k, nstart = 10 )$tot.withinss

}

#Define the class boundery of the k series as:

k.values <- 1:15

#Next create a new variable called wss\_values then

#the assign it a function called map\_dbl, to generate vector double outputs

#using the k start variable w initially created

wss\_values <- map\_dbl(k.values, w)

# Use the R plot function plot(), to plot the vectors that

#will take the horizontal scale as "Number of clusters K"

#and Vertical scale as "Total within-clusters sum of squares"

#Use type="b" to plot dots by default and plot 19 set of characters

#Finally convert frames to factor columns by default using argument frame = FALSE

plot(k.values, wss\_values,

     type="b", pch = 19, frame = FALSE,

     xlab="Number of clusters K",

     ylab="Total within-clusters sum of squares")