Hwk 1

Data in R, Fall 2022

Complete the following tasks using R, RStudio as demonstrated in class.

## Question 1

## Engine 1

Create the vector below.

## Displacement (cc) Net Power Out (kW) Net Torque (Nm)   
## 163.00 3.60 10.30   
## Oil Capacity (l) Fuel Tank Capacity (l)   
## 0.58 3.10

Examine the attributes, dimension(s) and data type for this vector. Comment.

## Engine 2

As efficiently as possible, create the vector below.

## Displacement (cc) Net Power Out (kW) Net Torque (Nm)   
## "163" "3.6" "10.3"   
## Oil Capacity (l) Fuel Tank Capacity (l)   
## "0.58" "3.1"

Examine the attributes, dimension(s) and data type for this vector. What has changed?

## Question 2 – Family

Create a vector with names of your family members, making clear which name is for your father, wife, husband, son, cat, etc…

## Question 3 - Matrices

## Create the matrix below.

## AA BB CC DD EE  
## [1,] -3.3 -1.0 1.3 3.6 5.9  
## [2,] 8.2 10.5 12.8 15.1 17.4  
## [3,] 19.7 22.0 24.3 26.6 28.9

Use **str** to examine the properties of this matrix and comment.

## (b)arithmetic with matrix

Add 3.3 to the matrix above, and divide by 2.3. Show your results and comment.

## (c)Create the matrix below.

Use prior results to complete this task as efficiently as possible.

## [,1] [,2] [,3]  
## [1,] -3.3 22.0 15.1  
## [2,] 8.2 1.3 26.6  
## [3,] 19.7 12.8 5.9  
## [4,] -1.0 24.3 17.4  
## [5,] 10.5 3.6 28.9

Use **str** to examine the properties of this matrix and comment.

## (d) Create the matrix below.

Use prior results to complete this task as efficiently as possible.

## [,1] [,2] [,3]  
## [1,] -3 21 15  
## [2,] 8 1 26  
## [3,] 19 12 5  
## [4,] -1 24 17  
## [5,] 10 3 28

Use **str** to examine the properties of this matrix and comment.