Rprogramming_Task 2_Vector,Array,Matrix,List and control flow

1. Object x <-1:15
    Construct a 5x3 matrix for the value of x.
2. Write a program to generate the following 4x4 matrix
    0 0 0 0
    0 0 0 0
    0 0 0 0
3. The object x<-1:8
    Write a program to generate the following 3x8 matrix using "cbind(),rbind(),rev(),rep()"
    1 2 3 4 5 6 7 8
    8 7 6 5 4 3 2 1
    3 3 3 3 3 3 3 3
4. Chose two different(x,y) 4x4 matrix to perform the following arithmetic operations
    (a). x + y
    (b). x - y
    (c). x*y
    (d). x%*%y
    (e). Difference between (c) &(d)
    (f). Inverse of y
    (g). z<-x/y
    (h). Transpose of z
    (i). Diagonal of transpose matrix
5. Difference between (i) & (ii)
     (i). x<-matrix(x<-1:9,3,3,byrow = TRUE) (ii). x<-matrix(x<-1:9,3,3)
6. Which function can we use for inner product and outer product in matrix calculation?
7. Explain the use of all.equal() function in Matrix with a sample program.
8. Explain the use of dim() function with a sample program.
9. Use of $ operator, and square brackets [] in List with example program.
10. Explain ifelse() with example.
11. Write a program to get the weight and height from the user to calculate the following cases
    a. If your BMI is less than 18.5, it falls within the underweight range.
    b. If your BMI is 18.5 to <25, it falls within the normal.
    c. If your BMI is 25.0 to <30, it falls within the overweight range.
    d. If your BMI is 30.0 or higher, it falls within the obese range.

12. Difference between List and Data frame with an example program.
13. Difference between repeat and while loop with example program.

Note: Please upload your answers on google classroom either in Rstudio (filename.Rmd) or Jupyter notebook.