

EXERCISE 1

Please write the solutions of the following exercises on your R script file. You can use # sign to list the answers. Note that this exercise sheet is prepared for practice. It is not a mandatory.

1. Write a program to assign the following expressions to a variable A and then to print out the value of A.

a. $(\frac{3}{8} * 7) + 12$

b. $\ln(15)$

c. $\sqrt{8}$

2. Celsius temperatures can be converted to Fahrenheit by multiplying by 9, dividing by 5, and adding 32. Assign a vector called C the value 37,27,14 and implement this formula to vector C and name Fah. Note that Fahrenheit shows the equivalent of 37,27 and 14 Celsius.

3. Create the following series by using `seq()` or `rep()` functions.

a. -10 -8 -6 -4 -2 0 2 4 6 8 10 -10 -8 -6 -4 -2 0 2 4 6 8 10 -10 -8 -6 -4 -2 0 2 4 6 8 10

b. -10 -10 -10 -8 -8 -8 -6 -6 -6 -4 -4 -4 -2 -2 -2 0 0 0 2 2 2 4 4 4 6 6 6 8 8 8 10 10 10

c. 2 4 6 8 8 6 4 2

d. "1" "2" "3" "red" "1" "2" "3" "red" "1" "2" "3" "red"

e. 2 2 2 2 3 3 3 5 5

4. Create the matrix $A = \begin{bmatrix} 1.2 & 1.3 & 0.5 \\ 2.45 & 0.89 & 1.6 \\ 1.46 & 4.12 & 8.1 \end{bmatrix}$ and $B = \begin{bmatrix} 1.8 & 8.1 & 1.9 \\ 2.0 & 1.9 & 2.3 \\ 1.0 & 1.9 & 3.8 \end{bmatrix}$

a. Calculate $A*B$

b. Calculate inverse and transpose of A and B respectively

c. Calculate $A-B$ and $A+B$

5. Please create the following dataset

Length	Speed	Algae
20	12	40
21	14	45
22	12	45
23	16	80

a. Pick out the item from the third row and the third column

b. Now select the third row and display columns one to three

c. Show the odd rows

d. Show the second column

e. Exclude Algae column