

# RWorksheet\_Tamayor#3a

2023-10-04

LETTERS

```
UppercaseLetter <- LETTERS [1:26] UppercaseLetter
```

```
letters
```

```
LowercaseLetter <- letters [1:26] LowercaseLetter
```

LETTERS

```
#a.first 11 letters
```

```
first11letters <- LETTERS [1:11] first11letters
```

```
#b. odd numbered letters
```

```
odddnumberletters <- LETTERS[seq(from=1, to=length (LETTERS),by=2)] oddnumberletters
```

```
#c. vowels
```

```
vowels <- LETTERS[c(1,5,9,15,21)] vowels
```

```
#d. last 5 lowercase letter
```

```
LowercaseLetter <- letters [22:26] LowercaseLetter
```

```
#e letters between 15 to 24 letters in lowercase
```

```
LowercaseLetter <- letters[15:24] LowercaseLetter
```

#2. average temperatures in April for Tuguegarao City, Manila, Iloilo City, Tacloban, Samal Island, and Davao City. The average temperatures in Celcius are 42, 39, 34, 34, 30, and 27 degrees.

```
#a. Creating a character vector for the city/town
```

```
city <- c("Tuguegarao City", "Manila", "Iloilo City", "Tacloban", "Samal Island", "Davao City") city
```

```
#output [1] "Tuguegarao City" "Manila" "Iloilo City" "Tacloban" "Samal Island" "Davao City"
```

```
#b. The average temperatures in Celcius are 42, 39, 34, 34, 30, and 27 degrees.
```

```
temp <- c(42, 39, 34, 34, 30, 27) temp
```

```
#output [1] 42 39 34 34 30 27
```

```
#c. dataframe to combine the city and the temp
```

```
city <- c("Tuguegarao City", "Manila", "Iloilo City", "Tacloban", "Samal Island", "Davao City")
```

```
temps <- c(42, 39, 34, 34, 30, 27)
```

```
citytemp <- data.frame (
```

```
  city = c("Tuguegarao City", "Manila", "Iloilo City", "Tacloban", "Samal Island", "Davao City"),  
  temp = c(42, 39, 34, 34, 30, 27)
```

```

)
citytemp View(citytemp)
#d. Associate the dataframe you have created in 2.(c)
names(citytemp) <- c ("City", "Temperature") citytemp
#e. print the structure
print(str(citytemp)) #The output displayed that there are 6 observations of 2 variables.
#f. what is the content of row 3 and row 4
row3_4 <- citytemp [3:4,] row3_4
#g. highest and lowest temperature
highest_temp <-citytemp [which.max(citytemp$Temperature),] highest_temp
lowest_temp <-citytemp [which.min(citytemp$Temperature),] lowest_temp
#using matrices

```

## **row = 2**

```
matrix(c(5,6,7,4,3,2,1,2,3,7,8,9),nrow = 2)
```

## **row = 3 and column = 2**

```
matrix(data = c(3,4,5,6,7,8),3,2)
```

## **creating a diagonal matrix where x value will always be 1**

```

diag(1,nrow = 6,ncol = 5)
diag(6)
#2. Create a matrix of one to eight and eleven to fourteen with four columns and three rows.
#a. What will be the R code for the #2 question and its result?
#row=3 matrix (c(1:8, 11:14),nrow=3)
#b. Multiply the matrix by two. What is its R code and its result?
matrix=matrix*2 matrix
#c. What is the content of row 2? What is its R code?
x2 <- matrix (c(1:8, 11:14),nrow=3) x2
rowx2 <- x2[,2] rowx2
#d. What will be the R code if you want to display the column 3 and column 4 in row 1 and row 2? What is its output?
x2 <- x2[1:2,3:4] x2
#e. What is the R code if you want to display only the columns in 2 and 3, row 3? What is its output?
subsetx2 <- x2[3,2:3] subsetx2
#f. What is the R code if you want to display only the columns 4? What is its output?

```

```
colx2 <- x2[,4] colx2
```

#g. Name the rows as isa, dalawa, tatlo and columns as uno, dos, tres, quatro for the matrix that was created in b. What is its R code and corresponding output?

```
mat <- matrix (c(1:8, 11:14), nrow=3)
```

```
rownames(mat) <- c ("isa", "dalawa", "tatlo") colnames(mat) <- c ("uno", "dos", "tres", "quatro") print(mat)
```

#h. From the original matrix you have created in a, reshape the matrix by assigning a new dimension with dim(). New dimensions should have 2 columns and 6 rows. What will be the R code and its output?

```
mat <- matrix (mat, nrow=6, ncol=2) mat
```

```
#Using Arrays
```

**creates a two-dimensional array containing numbers from 1 to 24 that have 3 rows and 4 columns**

```
array_dta <- array(c(1:24), c(3,4,2)) array_dta
```

**checking for the dimensions**

**row, column, dimension**

```
dim(array_dta)
```

```
#checking for the number of elements
```

```
length(array_dta)
```

- Another way to create arrays vectorA <- c(1:24)

**creating an array**

```
an_Array <- array(vectorA, dim = c(3,4,2)) an_Array
```

#a. Create an array for the above numeric values. Each values will be repeated twice What will be the R code if you are to create a three-dimensional array with 4 columns and 2 rows. What will be its output?

#3. An array contains 1, 2, 3, 6, 7, 8, 9, 0, 3, 4, 5, 1

```
vectorA <- c(1,2,3,6,7,8,9,0,3,4,5,1)
```

```
array <- array(vectorA, dim=c(2,4,3)) array
```

#b. How many dimensions do your array have?

```
dim(array)
```

#c. c. Name the rows as lowercase letters and columns as uppercase letters starting from the A. The array names should be "1st-Dimensional Array", "2nd-Dimensional Array", and "3rd-Dimensional Array". What will be the R codes and its output?

```
colnames(array) <- c ("A", "B", "C", "D") rownames(array) <- c ("a", "b")
```

```
array
```