# RWorksheets_lauron#3a.Rmd

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```
#code here

#1
C_letters <- LETTERS[1:26]
C_letters
```

```
##  [1] "A" "B" "C" "D" "E" "F" "G" "H" "I" "J" "K" "L" "M" "N" "O" "P" "Q" "R" "S"
## [20] "T" "U" "V" "W" "X" "Y" "Z"
```

```
#output
#[1] "A" "B" "C" "D" "E" "F" "G" "H" "I" "J" "K" "L" "M" "N" "O" "P" "Q" "R"
#[19] "S" "T" "U" "V" "W" "X" "Y" "Z"

#small
s_letters <- letters[1:26]

s_letters
```

```
##  [1] "a" "b" "c" "d" "e" "f" "g" "h" "i" "j" "k" "l" "m" "n" "o" "p" "q" "r" "s"
## [20] "t" "u" "v" "w" "x" "y" "z"
```

```
# [1] "a" "b" "c" "d" "e" "f" "g" "h" "i" "j" "k" "l" "m" "n" "o" "p" "q" "r" "s"

#[20] "t" "u" "v" "w" "x" "y" "z"

#a first 11 letters

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

```
##  [1] "A" "B" "C" "D" "E" "F" "G" "H" "I" "J" "K"
```

```
#[1] "A" "B" "C" "D" "E" "F" "G" "H" "I" "J" "K"


#b odd vector

odd_num<-LETTERS[seq(1,26, by=2)]

odd_num
```

```
##  [1] "A" "C" "E" "G" "I" "K" "M" "O" "Q" "S" "U" "W" "Y"
```

```
#[1] "A" "B" "C" "D" "E" "F" "G" "H" "I" "J" "K"
```

```r
#c vowels

vowel_letters <- LETTERS[LETTERS%in% c("A","E","I","O","U")]
vowel_letters
```

```
## [1] "A" "E" "I" "O" "U"
```

```r
#[1] "A" "E" "I" "O" "U"

#d last lowercase vector

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

```
## [1] "v" "w" "x" "y" "z"
```

```r
#[1] "v" "w" "x" "y" "z"

#e letter between 15 to 24
letterfift_twenny <- letters[15:24]
letterfift_twenny
```

```
##  [1] "o" "p" "q" "r" "s" "t" "u" "v" "w" "x"
```

```r
#[1] "o" "p" "q" "r" "s" "t" "u" "v" "w" "x"



#2
#a
city <- c("Tuguegarao City"," Manila","Iloilo City","Tacloban","Samal Island", "Davao City")
city
```

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

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

#2b
temp <- c(42, 39, 34, 34, 30,27)
temp
```

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

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

#2c
city_temp <- data.frame(city,temp)
city_temp
```

```
##              city temp
## 1 Tuguegarao City   42
## 2          Manila   39
## 3     Iloilo City   34
## 4        Tacloban   34
## 5    Samal Island   30
```

```
## 6      Davao City   27
```

```
#output
# city temp

#1 Tuguegarao City   42

#2          Manila   39

#3     Iloilo City   34

#4        Tacloban   34

#5    Samal Island   30

#6      Davao City   27

#2d

names(city_temp) <- c("City", "Temperature")
city_temp
```

```
##              City Temperature
## 1 Tuguegarao City          42
## 2          Manila          39
## 3     Iloilo City          34
## 4        Tacloban          34
## 5    Samal Island          30
## 6      Davao City          27
```

```
#output

 #City Temperature

#1 Tuguegarao City          42

#2          Manila          39

#3     Iloilo City          34

#4        Tacloban          34

#5    Samal Island          30

#6      Davao City          27

#2e

str(city_temp)
```

```
## 'data.frame':    6 obs. of  2 variables:
##  $ City       : chr  "Tuguegarao City" " Manila" "Iloilo City" "Tacloban" ...
##  $ Temperature: num  42 39 34 34 30 27
```

```
#'data.frame':  6 obs. of  2 variables:
```

```
 # $ City       : chr  "Tuguegarao City" " Manila" "Iloilo City" "Tacloban" ...

# $ Temperature: num  42 39 34 34 30 27

# -it separates the two variables by their name and specify the types.

#2f

city_temp[3:4, ]
```

```
##          City Temperature
## 3 Iloilo City          34
## 4    Tacloban          34
```

```
#output

#City Temperature

#3 Iloilo City          34

#4    Tacloban          34

#2g lowest and highest temp

highest_temp_city <-city_temp[which.max(city_temp$Temperature), ]
highest_temp_city
```

```
##              City Temperature
## 1 Tuguegarao City          42
```

```
#highest temp
# 1 Tuguegarao City          42

lowest_temp_city <- city_temp[which.min(city_temp$Temperature), ]
lowest_temp_city
```

```
##         City Temperature
## 6 Davao City          27
```

```
#Lowest City Temperature
# 6 Davao City          27

#Matrices


#2a

matrix_one <- matrix(c(1:8, 11:14), ncol=4, nrow = 3)
matrix_one
```

```
##      [,1] [,2] [,3] [,4]
## [1,]    1    4    7   12
## [2,]    2    5    8   13
## [3,]    3    6   11   14
```

```
#output
#[,1] [,2] [,3] [,4]
#[1,]    1    4    7   12
#[2,]    2    5    8   13
#[3,]    3    6   11   14

#2b

matrix_two <- matrix_one * 2
matrix_two
```

```
##      [,1] [,2] [,3] [,4]
## [1,]    2    8   14   24
## [2,]    4   10   16   26
## [3,]    6   12   22   28
```

```
#output
#[,1] [,2] [,3] [,4]
#[1,]    2    8   14   24
#[2,]    4   10   16   26
#[3,]    6   12   22   28


#2c

matrix_r <- matrix_one[2, ]
matrix_r
```

```
## [1]  2  5  8 13
```

```
#[1] 2 8


#2d
matrix_one[1:2, 3:4]
```

```
##      [,1] [,2]
## [1,]    7   12
## [2,]    8   13
```

```
#[,1] [,2]
#[1,]    7   12
#[2,]    8   13

#2e
matrix_one[3, 2:3]
```

```
## [1]  6 11
```

```
#[1]  6 11

#2f
matrix_one[, 4]
```

```
## [1] 12 13 14
```

```
#[1] 12 13 14
#2g
rownames(matrix_two) <- c("isa", "dalawa", "tatlo")
colnames(matrix_two) <- c("uno", "dos", "tres", "quatro")
print(matrix_two)
```

```
##        uno dos tres quatro
## isa      2   8   14     24
## dalawa   4  10   16     26
## tatlo    6  12   22     28
```

```
#output
#uno dos tres quatro
#isa      2   8   14     24
#dalawa   4  10   16     26
#tatlo    6  12   22     28

#2h
dim(matrix_one) <- c(6, 2)
matrix_one
```

```
##      [,1] [,2]
## [1,]    1    7
## [2,]    2    8
## [3,]    3   11
## [4,]    4   12
## [5,]    5   13
## [6,]    6   14
```

```
# [,1] [,2]
#[1,]    1    7
#[2,]    2    8
#[3,]    3   11
#[4,]    4   12
#[5,]    5   13
#[6,]    6   14

#Array
#3a
values <- c(1, 2, 3, 6, 7, 8, 9, 0, 3, 4, 5, 1)
values_repeated <- rep(values, 2)

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

```
## , , 1
##
##      [,1] [,2] [,3] [,4]
## [1,]    1    3    7    9
## [2,]    2    6    8    0
##
## , , 2
##
##      [,1] [,2] [,3] [,4]
## [1,]    3    5    1    3
```

```
## [2,]    4    1    2    6
##
## , , 3
##
##      [,1] [,2] [,3] [,4]
## [1,]    7    9    3    5
## [2,]    8    0    4    1
```

```
#output
#, , 1

#     [,1] [,2] [,3] [,4]
#[1,]    1    3    7    9
#[2,]    2    6    8    0

#, , 2

#     [,1] [,2] [,3] [,4]
#[1,]    3    5    1    3
#[2,]    4    1    2    6

#, , 3

#     [,1] [,2] [,3] [,4]
#[1,]    7    9    3    5
#[2,]    8    0    4    1

#3b
length(dim(array_one))
```

```
## [1] 3
```

```
#[1] 3

#3c
dimnames(array_one) <- list(letters[1:2],LETTERS[1:4],c("1st-Dimensional Array", "2nd-Dimensional Array
array_one
```

```
## , , 1st-Dimensional Array
##
##   A B C D
## a 1 3 7 9
## b 2 6 8 0
##
## , , 2nd-Dimensional Array
##
##   A B C D
## a 3 5 1 3
## b 4 1 2 6
##
## , , 3rd-Dimensional Array
##
##   A B C D
## a 7 9 3 5
## b 8 0 4 1
```

```
#, , 1st-Dimensional Array

#  A B C D
#a 1 3 7 9
#b 2 6 8 0

#, , 2nd-Dimensional Array

#  A B C D
#a 3 5 1 3
#b 4 1 2 6

#, , 3rd-Dimensional Array

#  A B C D
#a 7 9 3 5
#b 8 0 4 1
```