# RWorksheet_Suero#3a.

2023-10-04

```
#1 a.
LETTERS[1:11]
```

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

```
# b.
LETTERS[x=seq(1,26,by=2)]
```

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

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

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

```
# d.
last_five <-letters[c(22:26)]
last_five
```

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

```
# e. .
between_letters <-letters[c(15:24)]
between_letters
```

```
##  [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"
```

```
#2 b.

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

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

```
#2 c.
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
```

```
#2 d.
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
```

```
#2 e.

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
```

```
# the structure of the city_temp object is shows when you code it
# the contents of the data frame shows in the console
# the summary of the data frame is displayed

# 2 f.
twoRows <- city_temp[3:4,]
twoRows
```

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

```
#2 g.
high<- city_temp[which.max(city_temp$Temperature),]
high
```

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

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

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

```
#2 a.
matrx <-matrix(c(1:8,11:14),nrow = 3, ncol = 4)
matrx
```

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

```
#2 b.
multiply_matrx <-matrx*2
```

```
multiply_matrx
```

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

```
#2 c.

rowtwooo <- multiply_matrx[2,]
rowtwooo
```

```
## [1]  4 10 16 26
```

```
#2 d.
twocols_and_rows <- multiply_matrx[c(1,2),c(3,4)]
twocols_and_rows
```

```
##      [,1] [,2]
## [1,]   14   24
## [2,]   16   26
```

```
#2 e.

twocols_onerow <- multiply_matrx[3,c(2,3)]
twocols_onerow
```

```
## [1] 12 22
```

```
#2 f.
four_col <- multiply_matrx[,4]
four_col
```

```
## [1] 24 26 28
```

```
#2 g.
dimnames( multiply_matrx) <- list(c("isa", "dalawa", "tatlo"), c("uno", "dos", "tres", "quatro"))
multiply_matrx
```

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

```
#2 h.

matrx
```

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

```
dim(matrx) <- c(6,2)
matrx
```

```
##      [,1] [,2]
## [1,]    1    7
## [2,]    2    8
## [3,]    3   11
```

```
## [4,]    4   12
## [5,]    5   13
## [6,]    6   14
```

```
#3 a.
vValues <- c(1, 2, 3, 6, 7, 8, 9, 0, 3, 4, 5, 1)
rep_values <- rep(vValues, each = 2)

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

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

```
#3 b.
# My array has 3 dimensions

#3 c.

dimnames(array)<-list(
  letters[1:2], # row names
  LETTERS[1:4], # col names
c("1st-Dimensional Array","2nd-Dimensional Array","3rd-Dimensional Array")# dim names
)

array
```

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

```
##   A B C D
## a 3 4 5 1
## b 3 4 5 1
```