RWorksheet#3a

2023-10-04

```
# 1.
uppercase_letters <- LETTERS[1:26]
uppercase_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"
```

```
lowercase_letters <- letters[1:26]
lowercase_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"
```

```
# a.
first_11 <- LETTERS [1:11]
first_11
```

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

```
# b.
oddLetters <- LETTERS[c(TRUE, FALSE)]
oddLetters
```

```
##  [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.
five_lowercase <- letters [22:26]
five_lowercase
```

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

```
# e.
lowercase15_24 <- letters [15:24]
lowercase15_24
```

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

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

```r
# c.
data <- data.frame (temp = c(42,39,34,34,30,27),city = c("Tuguegarao City", "Manila", "Iloilo City", "Ta
data
```

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

```r
# d.
data2 <- data.frame (Temperature = temp, City = city)
data2
```

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

```r
# e.
matrix(c(1:8, 11:14), nrow = 3, ncol = 4)[3, 2:3]
```

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

```r
#f.
matrix(c(1:8, 11:14), nrow = 3, ncol = 4)[, 4]
```

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

```r
#g.
mat <- 2* matrix(c(1:8, 11:14), nrow = 3, ncol = 4)
rownames(mat) <- c("isa", "dalawa", "tatlo")
colnames(mat) <- c("uno", "dos", "tres", "quatro")
mat
```

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

```r
# h.
new_mat <- matrix(c(1:8, 11:14), nrow = 3, ncol = 4)
dim(new_mat) <- c(6, 2)
new_mat
```

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

```
## [3,]    3   11
## [4,]    4   12
## [5,]    5   13
## [6,]    6   14
```

```
#3.

#a.
data <- c(1, 2, 3, 6, 7, 8, 9, 0, 3, 4, 5, 1)

Array_Val <- array (c (1:3, 6:9, 0, 3:5, 1), c (2,4,3))
Array_Val
```

```
## , , 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
```

```
#b.
dim(Array_Val)
```

```
## [1] 2 4 3
```

```
#c.

data <- c(1:3, 6:9, 0, 3:5, 1)
Array_Val <- array(data, dim = c(2, 4, 3))

dimnames(Array_Val) <- list(
  c("a", "b"),
  c("A", "B", "C", "D"),
  c("1st-Dimensional Array", "2nd-Dimensional Array", "3rd-Dimensional Array")
)

Array_Val
```

```
## , , 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
```