RWorksheet_SADSAD#2b

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```
#Using Vectors

#1.

#a
elevenLetters <- LETTERS[1:11]
elevenLetters
```

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

```
#b
oddNumLetters<- LETTERS [1:26 %% 2 == 1]
oddNumLetters
```

```
##  [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
smolLetter <- letters
smolLetter
```

```
##  [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"
```

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

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

```
#2.

#a.
city <- c("Tugue-garao City", "Manila", "Iloilo City", "Tacloban", "Samal Island", "Davao City")
city
```

```
## [1] "Tugue-garao City" "Manila"           "Iloilo City"      "Tacloban"
## [5] "Samal Island"     "Davao City"
```

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

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

```
#c.
cityTemp <- data.frame(city,temp)
cityTemp #The cityTemp data frame has two columns: "city" and "temp". The "city" column contains the ci
```

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

```
#d.
colnames(cityTemp) <- c("City", "Temperature")
col_names <- colnames(cityTemp)
col_names#The cityTemp has two column names which contains "city" and "temperature", and
```

```
## [1] "City"        "Temperature"
```

```
#e.
str(cityTemp) #str(cityTemp) output tells that cityTemp is a data frame with two columns:"City" and "Te
```

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

```
#f
row_3 <- cityTemp[3,]
row_3
```

```
##          City Temperature
## 3 Iloilo City          34
```

```
row_4 <- cityTemp[4,]
row_4
```

```
##       City Temperature
## 4 Tacloban          34
```

```r
#g
max(cityTemp$City)
```

```
## [1] "Tugue-garao City"
```

```r
min(cityTemp$City)
```

```
## [1] "Davao City"
```

```r
#Using Matrices

#2.Create a matrix of one to eight and eleven to fourteen with four columns and three rows.

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

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

```r
#b
orgMatrix_new <- orgMatrix *2
orgMatrix_new
```

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

```r
#c
row_2 <- orgMatrix_new[2,]
row_2
```

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

```r
#d
select_val <-orgMatrix_new[c(1,2), c(3,4)]
select_val
```

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

```r
#e
select_val2 <-orgMatrix_new[3, c(2,3)]
select_val2
```

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

```r
#f
col<- orgMatrix_new[,4]
col
```

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

```r
#g
rownames(orgMatrix_new) <- c("isa", "dalawa", "tatlo")
colnames(orgMatrix_new) <- c("uno", "dos", "tres", "quatro")
orgMatrix_new
```

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

```r
dim(orgMatrix_new) <- c(6,2)
orgMatrix_new
```

```
##      [,1] [,2]
## [1,]    2   14
## [2,]    4   16
## [3,]    6   22
## [4,]    8   24
## [5,]   10   26
## [6,]   12   28
```

```r
#Using Arrays

#3

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


array_data<- array(numeric_values, dim = c(4,2,6))
array_data
```

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

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

```r
#b Three dimensions (4,2,6)
dim(array_data)
```

```
## [1] 4 2 6
```

```r
#c
row_nams <-  letters [1:4]
col_nams <- LETTERS [1:2]
third_dim_names <- c("1st-Dimensional Array", "2nd-Dimensional Array", "3rd-Dimensional Array",
                     "1st-Dimensional Array", "2nd-Dimensional Array", "3rd-Dimensional Array")

dimnames(array_data) <- list(row_nams, col_nams, third_dim_names)

array_data
```

```
## , , 1st-Dimensional Array
##
##   A B
```

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