Rworkesheet_Garcia#3a

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

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

```
#b
LETTERS[seq(1,25,by=2)]
```

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

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

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

```
#d.
last5 <- LETTERS[22:26]

#e.
between <- LETTERS[15:24]
```

```
#Part 2

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

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

#c.
citytemp <- data.frame(city,temp)

#d.
names(citytemp)[1] <- "City"
names(citytemp)[2] <- "Temperature"
citytemp
```

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

```
#e.
str(citytemp)
```

```
## 'data.frame':    6 obs. of  2 variables:
##  $ City       : chr  "Tugue-garao City" "Manila" "Iloilo City" "Tacloban" ...
```

```
##  $ Temperature: num  42 39 34 34 30 27
```

```
#the data frame containing six cities with their corresponding temperature

#f.
#the content of row 3 and 4 is iloilo and tacloban,they have the same temperature

#g.
print(citytemp[1,])
```

```
##               City Temperature
## 1 Tugue-garao City          42
```

```
print(citytemp[6,])
```

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

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

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

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

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

```
diag(1,nrow = 6,ncol = 5)
```

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

```
diag(6)
```

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

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

#2b.
my_matrix * 2
```

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

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

```
#2c.
my_matrix[2,]
```

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

```
#2d.
my_matrix[1:2, 3:4]
```

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

```
#2e.
my_matrix[3, 2:3]
```

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

```
#2f.
my_matrix[, 4]
```

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

```
#2g.
dimnames(my_matrix) <- list(c("isa","dalawa","tatlo"))
                            #Rows names (3 rows)c ("uno","dos","tres","quatro") # Colums names (4 colum



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

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

```
#array

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

# Repeat each value twice
rep_values <- rep(values, each = 2)

# Create a 3D array with 2 rows, 4 columns, and 3 dimensions
array_dta <- array(rep_values, dim = c(2, 4, 3))
array_dta
```

```
## , , 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
```

```
#3b.
dim(array_dta)
```

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

```
#3c.
# Adding names
dimnames(array_dta) <- list(
  rows = c("a", "b"),    # lowercase row names
  columns = c("A", "B", "C", "D"),    # uppercase column names
  dimension = c("1st-Dimensional Array",
                "2nd-Dimensional Array",
                "3rd-Dimensional Array")  # layer names
)

array_dta
```

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