RWorksheet_Aguirre#3A

Ryza Faith

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1A.

```r
first_11_letters <- LETTERS[1:11]
first_11_letters
```

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

1B.

```r
odd_letters <- LETTERS[seq(1, 26, by=2)]
odd_letters
```

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

1C.

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

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

1D.

```r
first_11_letters <- letters[1:11]
first_11_letters
```

```
##  [1] "a" "b" "c" "d" "e" "f" "g" "h" "i" "j" "k"
```

1E.

```r
first_11_letters <- letters[15:24]
first_11_letters
```

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

2A.

```r
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"
```

2B.

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

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

2C.

```r
city_temperature_df <- data.frame(city, temperature)
city_temperature_df
```

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

2D.

```r
names(city_temperature_df) <- c("City", "Temperature")
city_temperature_df
```

```
##              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.

```r
str(city_temperature_df)
```

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

2F.

```
city_temperature_df[3:4, ]
```

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

2G.

```
city_temperature_df[city_temperature_df$Temperature == max(city_temperature_df$Temperature), ]
```

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

2G.

```
city_temperature_df[city_temperature_df$Temperature == min(city_temperature_df$Temperature), ]
```

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

Matrix 2A.

```
matrix_1 <- matrix(c(1:8, 11:14), nrow = 3, ncol = 4)
matrix_1
```

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

2B.

```
matrix_2x <- matrix_1 * 2
matrix_2x
```

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

2C.

```
matrix_1[2, ]
```

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

2D.
```

```
matrix_1[1:2, 3:4]
```

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

2E.

```
matrix_1[3, 2:3]
```

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

2F.

```
matrix_1[, 4]
```

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

2G.

```
rownames(matrix_2x) <- c("isa", "dalawa", "tatlo")
colnames(matrix_2x) <- c("uno", "dos", "tres", "quatro")
matrix_2x
```

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

2H.

```
dim(matrix_1) <- c(6, 2)
matrix_1
```

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

Using Array A.

```
values <- rep(c(1, 2, 3, 6, 7, 8, 9, 0, 3, 4, 5, 1), 2)
array_3d <- array(values, dim = c(2, 4, 3))
array_3d
```

```
## , , 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_3d)
```

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

C.

```
rownames_array <- c("a", "b")
colnames_array <- c("A", "B", "C", "D")
dimnames(array_3d) <- list(rownames_array, colnames_array,
                           c("1st-Dimensional Array", "2nd-Dimensional Array", "3rd-Dimensional Array"))
array_3d
```

```
## , , 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
```