

# Rworksheet\_Loredo#3a.Rmd

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#1a. Produce a vector that contains the first 11 letters.

```
LETTERS_11 <- LETTERS[c(1:11)]  
LETTERS_11
```

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

*#b. Produce a vector that contains the odd numbered letters.*

```
lenLet <- length(LETTERS)  
oddNum <- LETTERS[seq(lenLet) %% 2 == 1]  
oddNum
```

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

*#c. Produce a vector that contains the vowels*

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

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

*#d. Produce a vector that contains the last 5 lowercase letters.*

```
Letters5 <- letters [c(20:24)]  
Letters5
```

```
## [1] "t" "u" "v" "w" "x"
```

*#e. Produce a vector that contains letters between 15 to 24 letters in lowercase.*

```
fifto24 <- letters [c(17:24)]  
fifto24
```

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

#2a.

```
CityVector = c("Tuguegarao City", "Manila", "Iloilo City", "Tacloban", "Samal Island", "Davao City")  
CityVector
```

```
## [1] "Tuguegarao City"      "Manila"                "Iloilo City"
```

```
## [4] "Tacloban"            "Samal Island"          "Davao City"
```

*#2b.*

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

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

*#2c.*

```
city_temp <- data.frame(CityVector,temp)  
city_temp
```

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

*#2d.*

```
names(city_temp) <- c("CityVector", "Temperature")
city_temp
```

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

*#2e.*

```
str(city_temp)
```

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

*#the code displayed the structure of the city\_temp object  
#it displayed the contents of the data frame  
#it displayed the summary of the data frame*

*#2f.*

```
twoRows <- city_temp[3:4,]
```

*#2g.*

```
highest <- city_temp[which.max(city_temp$Temperature),]
highest
```

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

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

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

*#Using matrices*

*#2a.*

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

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

```

#b.
mulMatr <- matr * 2
mulMatr

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

#c.
rowTwo <- mulMatr[2,]
rowTwo

## [1]  4 10 16 26

#d.
twoColsAndRows <- mulMatr[c(1,2),c(3,4)]
twoColsAndRows

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

#e.
twoColsOneRow <- mulMatr[3,c(2,3)]
twoColsOneRow

## [1] 12 22

#f.
fourCol <- mulMatr[,4]
fourCol

## [1] 24 26 28

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

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

#h.
matr

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

dim(matr) <- c(6,2)
matr

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

```

```
## [6,]    6   14
```

### *#Arrays*

#3a.

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

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

```
## , , 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.

*#three dimensions*

#3c.

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

```
arr
```

```
## , , 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
```