

# RWorksheet\_Vicinte#3a

Anthony Dave Vicinte

2024-09-30

#1. There is a built-in vector LETTERS contains the uppercase letters of the alphabet and letters which contains the lowercase letters of the alphabet. #LETTERS

```
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"
```

```
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"
```

#Based on the above vector LETTERS: #a. You need to produce a vector that contains the first 11 letters

```
First11 <- LETTERS[1:11]
First11
```

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

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

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

```
## [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.

```
Last5 <- tail(letters,5)
Last5
```

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

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

```
Between <- letters[15:24]
Between
```

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

#2. Create a vector(not a dataframe) with the average temperatures in April for Tuguegarao City, Manila, Iloilo City, Tacloban, Samal Island, and Davao City. The average temperatures in Celcius are 42, 39, 34, 34, 30, and 27 degrees. #a

```
city <- c("Tuguegarao City", "Manila", "Iloilo City", "Tacloban", "Samal Island", "Davao City")
```

```
#b
```

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

#c. Create a dataframe to combine the city and the temp by using 'data.frame()'. What the R code and its result?

```
CombCityTemp <- data.frame(city, temp)
CombCityTemp
```

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

```
#d
```

```
names(CombCityTemp) <- c("City", "Temperature")
CombCityTemp
```

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

```
#e.
```

```
str(CombCityTemp)
```

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

*#Describe the output: It shows the structure of the data frame.*

```
#f.
```

```
CombCityTemp[3:4, ]
```

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

```
#g.
```

```
CombCityTemp[1, ]
```

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

```
CombCityTemp[6, ]
```

```
##           City Temperature
```

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

```
#Using Matrices
```

```
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
```

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

```
Thematrix <- matrix(data = c(1,2,3,4,5,6,7,8,11,12,13,14),3,4)
Thematrix
```

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

#b.

```
multiply <- Thematrix * 2
multiply
```

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

#c.

```
r2 <- Thematrix[2, ]
r2
```

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

```
#d.
```

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

```
##      [,1] [,2]
```

```
## [1,] 14 24
```

```
## [2,] 16 26
```

```
#e.
```

```
multiply[3, 2:3]
```

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

```
#f
```

```
multiply[, 4]
```

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

```
#g.
```

```
rownames(multiply) <- c("isa", "dalawa", "tatlo")
```

```
colnames(multiply) <- c("uno", "dos", "tres", "quatro")
```

```
multiply
```

```
##      uno dos tres quatro
```

```
## isa    2  8  14   24
```

```
## dalawa 4 10 16   26
```

```
## tatlo  6 12 22   28
```

```
#h.
```