

Rworksheet_rabago#3a

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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"
```

1.a. You need to produce a vector that contains the first 11 letters.

```
f11 <- LETTERS [1:11]  
f11
```

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

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

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

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

1.c. Produce a vector that contains the vowels

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

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

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

```
last <- letters [22:26]  
last
```

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

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

```
l15to24 <- letters [15:24]  
l15to24
```

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

2.a.

```
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"
```

2.b.

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

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

2.c.

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

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

2.d.

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

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

2.e

```
``` r
str(citytemp)

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

-the dataframe citytemp has 6 observations and 2 variables the City column is a character vector(chr) while the Temperature column is a numeric(num).

2.f.

```
citytemp[3:4,]
```

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

2.g.

```
citytemp[which.max(citytemp$Temperature),]
```

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

```
citytemp[which.min(citytemp$Temperature),]
```

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

Tuguegarao City has the highest temperature city and Davao City has the lowest

2.a.

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

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

2.b.

```
mat2x <- mat * 2
mat2x
```

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

2.c.

```
mat[2,]
```

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

2.d.

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

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

2.e

```
mat[3, 2:3]
```

```
[1] 6 11
```

2.f

```
mat[,4]
```

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

2.g

```
rownames(mat2x) <- c("isa","dalawa","tatlo")
colnames(mat2x) <- c("uno","dos","tres","quatro")
mat2x
```

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

2.h

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

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

3.a.

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

```
, , 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
```

3.b.

```
dim(myarray)
```

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

2 4 3 is the result

3.c

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

```
, , 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
```