### What is the output of the code?

\[
y <- \text{matrix}(c(1,2,3,4), \text{byrow}=\text{true})
y
\]

- \[
\begin{bmatrix}
[1,] & 1 \\
[2,] & 2 \\
[3,] & 3 \\
[4,] & 4
\end{bmatrix}
\]

- \[
\begin{bmatrix}
[1,] & 1 & 2 & 3 & 4 \\
[1,] & 1 & 2 \\
[2,] & 3 & 4
\end{bmatrix}
\]

- \[
\begin{bmatrix}
[1,] & 1 & 2 \\
[2,] & 3 & 4
\end{bmatrix}
\]

- Error

### What will the dimension of matrix.std be if the following code script is executed?

```r
> h <- \text{rbind}(c(5,6), \text{cbind}(c(1,2), c(3,4)))
> \text{matrix.std} <- \text{cbind}(h, c(2,3))
```

- \[3 \times 3\]
- \[4 \times 2\]
- \[2 \times 4\]
- Error

### Three matrices are given below. Which one of the following will give me mymatrix3?

1. `mymatrix1`
   - \[
   \begin{bmatrix}
   [,1] & 1 & 5 & 4 \\
   [,2] & 0 & 1 & -1
   \end{bmatrix}
   \]
2. `mymatrix2`
   - \[
   \begin{bmatrix}
   [,1] & -1 & 4 \\
   [,2] & -3 & 1 & 1
   \end{bmatrix}
   \]
3. `mymatrix3`
   - \[
   \begin{bmatrix}
   [,1] & -1 & 1 & 4 \\
   [,2] & -8 & 6 & 21 \\
   [,3] & -1 & 3 & 15
   \end{bmatrix}
   \]

- `t(mymatrix1)%*%mymatrix2`
- `t(mymatrix1)*mymatrix2`
- `mymatrix1*mymatrix2`
- Error

The matrix below shows us Height and Weight values of students in class. Two more Students Can and Ahmet join the class. Their Height and Weight values are given in the vector:

\[
\text{vec} <- \text{c}(1.85, 77, 1.79, 65)
\]

- `names(vec) <- c("Canh", "Canw", "Ahmeth", "Ahmetw")`

- `weight.height <- \text{cbind}(\text{weight.height}, \text{vec})`
- `weight.height <- \text{cbind}(weight.height, vec[c(3, 4)])`
- `weight.height <- \text{cbind}(weight.height, vec[c(1, 2)], vec[c(3, 4)])`
I want to put their data into the `weight.height` matrix. I also want to name the values. Which one of the following will work?

```
> x <- rbind(c(1,2,3),c(4,5,6))
> x <- cbind(x,1:6)
```

warning message: in `cbind(x, 1:6)`: number of rows of result is not a multiple of vector length (arg 2)

warning message is given by R, but that doesn’t mean that it didn’t add the vector to the matrix:

```
> dim(x)
2 4
```

```
> names(weight.height) <- c(names(weight.height), c("Can","Ahmet"))
> weight.height <- cbind(weight.height, vec[-c(3,4)], vec[-c(1,2)])
> colnames(weight.height) <- c(names(weight.height,"Can","Ahmet"))
```

```
> weight.height <- cbind(weight.height, vec)
> weight.height <- cbind(weight.height, vec[3,4])
> names(weight.height) <- c(names(weight.height[1:3]), c("Can","Ahmet"))
```

What is the output if the following code is executed?

```
z <- matrix(c(1:16), nrow=4)
z[2,4]
```

- 14
- 8
- 6
- 16

What is the output if the following code script is executed?

```
n <- matrix(c(1:20), nrow=5)
x <- n[1:3,3:4]
x<13
```

```
TRUE FALSE
FALSE FALSE
FALSE TRUE
FALSE TRUE
TRUE TRUE
TRUE TRUE FALSE
TRUE TRUE FALSE
FALSE FALSE TRUE
FALSE FALSE TRUE
```

Which does not generate the following output:

```
abcabc
```

- `c("a","b","c") + c("a","b","c")`
- `c("a","b","c","a","b","c")`
- `rep(c("a","b","c"),2)`
- `c(c("a","b","c"),"a","b","c")`

What is the output of seq(-5,5,5)?

- -5 0 5
- 5 0 -5
- -5 -2.5 0 2.5 5
- 5 2.5 0 -2.5 -5

What will be the output if you run

```
[,] [,2] [,3]
[1,] 16 25 36
[2,] 49 64 49
[3,] 36 25 16
```

```
[1] [,2] [,3]
[1,] 27 64 125
[2,] 216 343 216
```
we have the kate function:

```r
kate <- function(x, sawyer = 2, jack = 3) {(x + sawyer)^jack}
```

and we have the matrix:

```r
lost <- matrix(c(1, 2, 3, 4, 5, 4, 3, 2, 1), ncol = 3, nrow = 3, byrow = TRUE)
```

<table>
<thead>
<tr>
<th>Which one of the following code can give the matrix above?</th>
</tr>
</thead>
</table>
| \[ \begin{array}{c|c|c}
| 1 & 2 & 3 \\
| 4 & 5 & 6 \\
| 7 & 8 & 9 \\
| \end{array} \] |
| i) apply(cbind(c(1, 2, 3), c(4, 5, 6), c(7, 8, 9)), 1, function(x, plus = 2) {x + plus}) |
| ii) apply(matrix(c(1, 2, 3, 4, 5, 6, 7, 8, 9), nrow = 3, ncol = 3, byrow = TRUE), 2, function(x, plus = 2) {x + plus}) |
| iii) apply(rbind(c(1, 2, 3), c(4, 5, 6), c(7, 8, 9), byrow = TRUE), 1, function(x, plus = 2) {x + plus}) |
| i, ii |
| ii, iii |
| iii, iii |
| i, ii, iii |