2D Array related problems:

1. Write a program in C to find the sum of rows and columns of a Matrix.

Sample Input	Sample Output
| ```
3 4
1 2 3 1
2 2 2 3
4 4 5 6
``` | ```
row 1: 7
row 2: 9
row 3: 19
col 1: 7
col 2: 8
col 3: 10
col 4: 10
``` |

Or this way (better version):

Sample Input	Sample Output
| ```
3 4
1 2 3 1
2 2 2 3
4 4 5 6
``` | ```
1 2 3 1 7
2 2 2 3 9
4 4 5 6 19
7 8 10 10
``` |

2. Write a program in C to accept a matrix and determine whether it is a sparse matrix or not. We call a matrix sparse if most of its elements are 0.

Sample Input	Sample Output
| ```
3 4
1 0 0 1
2 2 0 0
4 0 5 0
``` | NO |
| ```
3 4
1 0 0 0
2 2 0 0
4 0 5 0
``` | YES |

3. Write a program in C to accept two matrices and check whether they are equal or not.

Sample Input	Sample Output
3 4 1 2 3 1 2 2 2 3 4 4 5 6 3 4 1 2 3 1 2 2 2 3 4 4 5 6	YES
3 4 1 2 3 1 2 2 2 3 4 4 5 6 3 3 1 2 3 2 2 2 4 4 5	NO

4. Write a program in C to print a matrix in spiral form.

Sample Input	Sample Output
3 4 1 2 3 1 2 2 2 3 4 4 5 6	1 2 3 1 3 6 5 4 4 2 2 2

```
4 5                    1 2 3 1 4 6 9 8 4 3 2 1 4 2 2
1 2 3 1 4              2   3 6 5 4
2 2 2 3 6
4 4 5 6 9
1 2 3 4 8
```

5. Write a C program to multiply matrices of same dimension.

Sample Input	Sample Output
3 3 1 2 0 0 1 1 2 0 1 1 1 2 2 1 1 1 2 1	5 3 4 3 3 2 3 4 5

6. Write a C program to find the number of ways you can make an integer S by summing two elements from two different matrices.

Sample Input	Sample Output
3 4 1 2 3 1 2 2 2 3 4 4 5 6 2 3 2 2 1 4 5 4 10	3 ways

```
3 4                                    5 ways
1 2 3 1
2 2 2 3
4 4 5 6

2 3
2 2 6
4 5 4

10
```

7. Write a C program to rotate a 2D array and copy it into another 2D array.
Then print the copied one.

Sample Input	Sample Output

`3 4`
`1 2 3 1`
`2 2 2 3`
`4 4 5 6`
	`1 2 4`
	`2 2 4`
	`3 2 5`
	`1 3 6`

8. You are given two matrices. Write a C program to check whether one of
these matrices is the mirror of another or not.

Sample Input	Sample Output

`3 4`
`1 2 3 1`
`2 2 2 3`
`4 4 5 6`
`3 4`
`1 3 2 1`
`3 2 2 2`
`6 5 4 4`
	`Yes`

3 4 1 2 3 1 2 2 2 3 4 4 5 6 3 4 1 2 3 1 2 2 2 3 4 4 5 6	No

9. Write a C program to find out the sum of two matrices.

Sample Input	Sample Output
2 3 1 2 3 7 8 9 5 6 7 3 4 5	6 8 10 10 12 14

10. Write a C program to check Whether a matrix is symmetric or not.

Sample Input	Sample Output
4 1 2 3 1 2 2 2 3 4 4 5 6 1 2 3 4	NO
4 1 2 3 1 2 2 2 3 3 2 5 6 1 3 6 4	YES