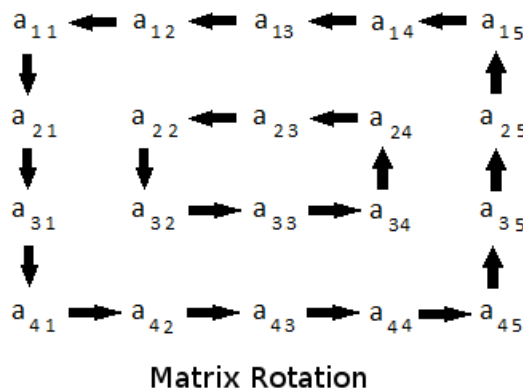


You are given a 2D matrix of dimension $m \times n$ and a positive integer r . You have to rotate the matrix r times and print the resultant matrix. Rotation should be in anti-clockwise direction.

Rotation of a ~~4~~**5** matrix is represented by the following figure. Note that in one rotation, you have to shift elements by one step only.



It is guaranteed that the minimum of m and n will be even.

As an example rotate the Start matrix by 2:

Start		First		Second
1 2 3 4		2 3 4 5		3 4 5 6
12 1 2 5	->	1 2 3 6	->	2 3 4 7
11 4 3 6		12 1 4 7		1 2 1 8
10 9 8 7		11 10 9 8		12 11 10 9

Function Description

Complete the *matrixRotation* function in the editor below.

matrixRotation has the following parameter(s):

- int* matrix[m][n]: a 2D array of integers
- int* r: the rotation factor

Prints

It should print the resultant 2D integer array and return nothing. Print each row on a separate line as space-separated integers.

Input Format

The first line contains three space separated integers, m , n , and r , the number of rows and columns in *matrix*, and the required rotation.

The next m lines contain n space-separated integers representing the elements of a row of *matrix*.

Constraints

$2 \leq m, n \leq 300$
 $1 \leq r \leq 10^9$
 $\min(m,n)\%2 = 0$
 $1 \leq matrix[i][j] \leq 10^8$ where $i \in [1 \dots m]$ and $j \in [1 \dots n]$

Sample Input

Sample Input #01

```
STDIN      Function
-----
4 4 2      rows m = 4, columns n = 4, rotation factor r = 2
1 2 3 4    matrix = [[1, 2, 3, 4], [5, 6, 7, 8], [9, 10, 11, 12], [13, 14, 15, 16]]
5 6 7 8
9 10 11 12
13 14 15 16
```

Sample Output #01

```
3 4 8 12
2 11 10 16
1 7 6 15
5 9 13 14
```

Explanation #01

The matrix is rotated through two rotations.

```
1 2 3 4      2 3 4 8      3 4 8 12
5 6 7 8      1 7 11 12    2 11 10 16
9 10 11 12  -> 5 6 10 16  -> 1 7 6 15
13 14 15 16   9 13 14 15   5 9 13 14
```

Sample Input #02

```
5 4 7
1 2 3 4
7 8 9 10
13 14 15 16
19 20 21 22
25 26 27 28
```

Sample Output #02

```
28 27 26 25
22 9 15 19
16 8 21 13
10 14 20 7
4 3 2 1
```

Explanation 02

The various states through 7 rotations:

1	2	3	4		2	3	4	10		3	4	10	16		4	10	16	22	
7	8	9	10		1	9	15	16		2	15	21	22		3	21	20	28	
13	14	15	16	->	7	8	21	22	->	1	9	20	28	->	2	15	14	27	->
19	20	21	22		13	14	20	28		7	8	14	27		1	9	8	26	
25	26	27	28		19	25	26	27		13	19	25	26		7	13	19	25	
10	16	22	28		16	22	28	27		22	28	27	26		28	27	26	25	
4	20	14	27		10	14	8	26		16	8	9	25		22	9	15	19	
3	21	8	26	->	4	20	9	25	->	10	14	15	19	->	16	8	21	13	
2	15	9	25		3	21	15	19		4	20	21	13		10	14	20	7	
1	7	13	19		2	1	7	13		3	2	1	7		4	3	2	1	

Sample Input #03

2	2	3
1	1	
1	1	

Sample Output #03

1	1
1	1

Explanation #03

All of the elements are the same, so any rotation will repeat the same matrix.