Matrix Layer Rotation

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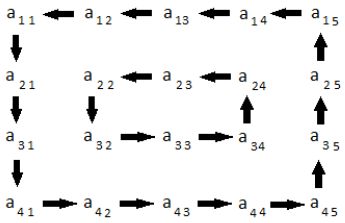
You are given a 2D matrix, *a*, of dimension *MxN* and a positive integer *R*. You have to rotate the matrix *R* times and print the resultant matrix. Rotation should be in anti-clockwise direction.

Rotation of a *4x5* matrix is represented by the following figure. Note that in one rotation, you have to shift elements by one step only (refer sample tests for more clarity).



Matrix Rotation

It is guaranteed that the minimum of *M* and *N* will be even.

Input Format

First line contains three space separated integers, *M*, *N* and *R*, where *M* is the number of rows, *N* is number of columns in matrix, and *R* is the number of times the matrix has to be rotated.

Then *M* lines follow, where each line contains *N* space separated positive integers. These *M* lines represent the matrix.

Constraints

$2 <= M, N <= 300$

$1 <= R <= 10^9$

$\min(M, N) \% 2 == 0$

$1 <= a_{ij} <= 10^8$, where $i \in [1..M]$ & $j \in [1..N]$

Output Format

Print the rotated matrix.

Sample Input #00

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

Sample Output #00

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

Sample Input #01

```
4 4 2
1 2 3 4
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
```

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
```

Sample Input #03

```
2 2 3
1 1
1 1
```

Sample Output #03

```
1 1
1 1
```

Explanation

Sample Case #00: Here is an illustration of what happens when the matrix is rotated once.

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

Sample Case #01: Here is what happens when to the matrix after 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 Case #02: Following are the intermediate states.

```
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 Case #03: As all elements are same, any rotation will reflect the same matrix.

Submissions: 10981

Max Score: 80

Difficulty: Difficult

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Current Buffer (saved locally, editable) C++

```cpp
#include <cmath>
#include <cstdio>
#include <vector>
#include <iostream>
#include <algorithm>
using namespace std;


int main() {
    /* Enter your code here. Read input from STDIN. Print output to STDOUT */
    return 0;
}

```

Line: 1 Col: 1

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