

# Power of matrix

You will be given a square matrix  $M$  and a positive integer power  $N$ . You will have to compute  $M$  raised to the power  $N$ . (that is,  $M$  multiplied with itself  $N$  times.)

## Input

First line of input is  $T$  ( number of test-cases) First line of each test-case contains two integer  $M$ ,  $N$  where  $M$  is size of square matrix that we have to exponent and  $N$  is the power to which we have to exponent

Next  $M$  lines describe the input matrix. Each line contains exactly  $M$  elements corresponding to each array

## Output

Output  $M$  line corresponding to each row of resultant matrix Each line must have  $M$  integers where  $j$ th element of  $i$ th line is  $j$ th element of resultant matrix taken modulo with **100000007** ( $10^9+7$ ).

Simply , you have to print the resultant square matrix.

## Example

### Input:

```
2
2 3
1 0
1 1
3 3
1 0 4
1 2 2
0 4 4
```

### Output:

```
1 0
3 1
17 112 116
15 88 100
28 144 160
```

### constraints:

$1 \leq T \leq 10$

$1 \leq M \leq 50$

$1 \leq N \leq 100000$

$0 \leq \text{each element of input matrix} \leq 10^9$