

[PI019] - Gift of Matrix

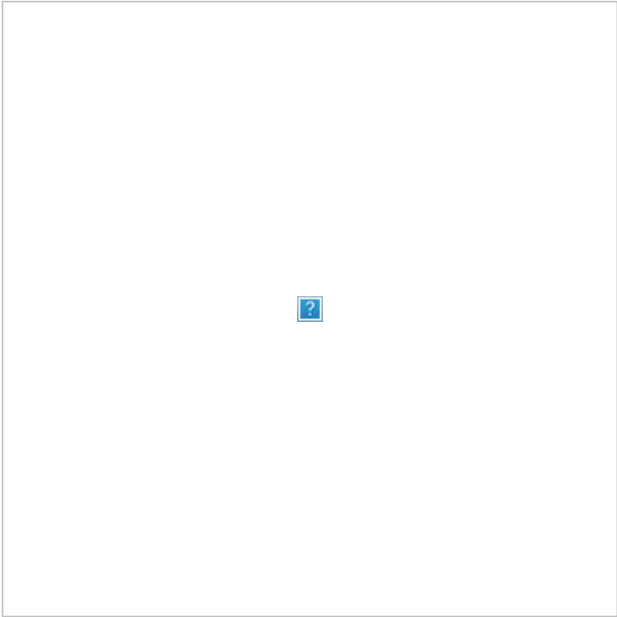
Morpheus' birthday is just around the corner, and Neo and Trinity want to surprise him with a truly unforgettable present.

After browsing through countless gift ideas in the digital realm, they come up with something uniquely fitting: a matrix.

But not just any matrix — Trinity suggests, "What if we combine our favorite matrices into one?"

"That's it!" says Neo. "We'll multiply them together."

Help Neo and Trinity perform the matrix multiplication so that Morpheus receives a gift worthy of the Matrix.



Task

You are given two matrices. Your task is to compute their matrix product. The dimensions will always be valid for multiplication.

Input

The first line contains two integers N and M , separated by a space ($1 \leq N, M \leq 100$).

Then N lines follow, each containing M integers separated by spaces. These lines represent Neo's favorite matrix.

The next line contains two integers M and K , separated by a space ($1 \leq K \leq 100$). The value M is the same as in the previous matrix.

Then M lines follow, each containing K integers separated by spaces. These lines represent Trinity's favorite matrix.

Each integer in the matrices will be between 0 and 100, inclusive.

Output

Print N lines, each containing K integers separated by spaces. This resulting matrix is the product AB , where A is Neo's matrix and B is Trinity's matrix.

Example 1

Input

```
2 2
1 0
0 1
2 3
42 100 25
31 25 1
```

Output

```
42 100 25
31 25 1
```

Example 2

Input

```
3 3
1 2 3
4 5 6
7 8 9
```

3 1
1
1
1

Output

6
15
24