Problem J Matrix multiplication

Given two matrices A and B of size $n \times n$, find the product of them.
bobo hates big integers. So you are only asked to find the result modulo 3.

Input

The first line contains n ($1 \leq n \leq 800$). Each of the following n lines contain n integers – the description of the matrix A. The j-th integer in the i-th line equals A_{ij}. The next n lines describe the matrix B in similar format ($0 \leq A_{ij}, B_{ij} \leq 10^9$).

Output

Print n lines. Each of them contain n integers – the matrix $A \times B$ in similar format.

Sample input 1

```
1
0
1
```

Sample output 1

```
0
```

Sample input 2

```
2
0 1
2 3
4 5
6 7
```

Sample output 2

```
0 1
2 1
```