# Problem G. Matrices and Determinants

| | |
|---|---|
| Input file: | *standard input* |
| Output file: | *standard output* |
| Time limit: | 1 second |
| Memory limit: | 256 mebibytes |

Given an $n \times n$ integer matrix $A$, you should find two $n \times n$ integer matrices $B$ and $C$ such that $B \cdot C = A$ and $\det(B) = \det(C) \neq 0$. There may exist multiple solutions or no solution.

Note: $\det(M)$ denotes the determinant of matrix $M$.

## Input

The first line contains one integer $T$ ($1 \leq T \leq 10\,000$) denoting the number of test cases. For each test case:

The first line contains one integer $n$ ($1 \leq n \leq 4$) denoting the size of the given matrix.

In the following $n$ lines, the $i$-th line contains $n$ integers $A_{i,j}$ ($|A_{i,j}| \leq 10$ for $1 \leq j \leq n$) denoting the given matrix.

## Output

For each test case:

The first line must contain one string "`Yes`" (without quotes) if a solution exists, or "`No`" (without quotes) if there is no solution. If a solution exists:

Each of the following $n$ lines contains $n$ integers $B_{i,j}$ ($|B_{i,j}| \leq 10^{18}$) denoting the matrix $B$.

Each of the following $n$ lines contains $n$ integers $C_{i,j}$ ($|C_{i,j}| \leq 10^{18}$) denoting the matrix $C$.

If multiple solutions exist, print any one of them.

## Example

| *standard input* | *standard output* |
|---|---|
| 3<br>2<br>2 0<br>0 2<br>2<br>2 1<br>1 2<br>1<br>1 | Yes<br>2 0<br>0 1<br>1 0<br>0 2<br>No<br>Yes<br>-1<br>-1 |