Problem A. Matrix God

Input file:	`standard input`
Output file:	`standard output`
Time limit:	2 seconds
Memory limit:	256 megabytes

Matrices are square tables, containing integers in rows and columns. Do you know how to multiply matrices? The product of matrices A and B of size $n \times n$ is a matrix $C = AB$, such that

$$C\left(i,j\right) = \sum_{k=1}^{n} A\left(i,k\right) \cdot B\left(k,j\right).$$

Here the brackets contain numbers of row and column, where the corresponding element of matrix is located.

As it is known, multiplying matrices is not the computationally simplest task. But not for Matrix god! He can easily multiply matrices using the number of operations of order $O\left(n^2\right)$. Here and now for some incomprehensible for mortals reason he is trying to determine, is it true that $AB = C$ for three given matrices A, B and C. For him solving this problem has no difficulties. Can you compare with him? The Matrix god gives you an advantage: determine, at least, whether or not reminders of division of each $C\left(i,j\right)$ by $10^9 + 7$ are found correctly.

Input

The first line contains a single integer n $(1 \le n \le 1000)$ — the size of all matrices.

Then in n lines n integers a_{ij}, separated by a space, are given $(0 \le a_{i,j} \le 10^9 + 6)$ — the elements of matrix A. In the next n lines the elements of matrix B are given in the same way, and after that in n more lines — the reminders of division of elements of matrix C by $10^9 + 7$.

Output

Output «`YES`» without quotes, if the reminders of division by $10^9 + 7$ of each element of matrix C are found correctly, otherwise output «`NO`» without quotes.

Examples

standard input	standard output
2 1 2 3 4 5 6 7 8 19 22 43 50	YES
3 1 2 3 4 5 6 7 8 9 1 4 7 2 5 8 3 6 9 14 32 50 32 76 122 50 122 194	NO
1 1000000006 1000000006 1	YES