Matrix Equation

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	256 megabytes

We call a matrix "01 Square" if and only if it's a $N \times N$ matrix and its elements are all 0 or 1.

For two 01 Squares X,Y, we define two operators $X \times Y$ and $X \odot Y$. The value of them are also 01 Square matrices and calculated below(we use Z to abbreviate $X \times Y$ and D to abbreviate $X \odot Y$):

$Z_{i,j} = (\sum_{k=1}^{N} X_{i,k} Y_{k,j}) \ mod \ 2$

$D_{i,j} = X_{i,j} Y_{i,j}$

Now MianKing has two 01 Squares A, B, he wants to solve the matrix equation below:

$A \times C = B \odot C$

You need to help MainKing solve this problem by calculating how many 01 Squares C satisfy this equation.

The answer may be very large, so you only need to output the answer module 998244353.

Input

The first line has one integer N

Then there are N lines and each line has N integers, the j-th integer of the i-th line denotes $A_{i,j}$

Then there are N lines and each line has N integers, the j-th integer of the i-th line denotes $B_{i,j}$

$1 \leq N \leq 200$, $A_{i,j}, B_{i,j} \in \{0, 1\}$

Output

Output the answer module 998244353.

Examples

standard input	standard output
2 0 1 1 1 1 0 0 1	2
3 1 0 0 0 1 0 0 0 1 1 1 1 1 1 1 1 1 1	512
4 0 1 0 1 0 1 1 0 0 1 1 1 1 0 0 1 1 0 1 1 0 1 1 1 1 0 0 1 1 1 1 0	8