Symmetric matrix

[NOTE: A harder version of this problem is Symmetric Matrix 2; you may want to try it once you solve this one.]

You are given an **N** x **N** matrix m_{ij} such that $m_{ij} == m_{ji}$ for **i, j = 1, ..., N**. We would like to compute the value of

$$\sum_{i_1=1}^{N} \cdots \sum_{i_K=1}^{N} \prod_{a=2}^{K} \prod_{b=1}^{a-1} m_{i_a i_b}$$

Note that in the above expression we are going over **K** indices $i_1, \ldots, i_K$ that run over the values **1, ..., N**, while summing over the product of all the **K*(K-1)/2** possible matrix elements that we can form with these indices.

Input

The first line of the input contains two integers **N** and **K** ($2 \le N \le 100$ and $2 \le K \le 5$), representing the number of rows and columns of the matrix m_{ij} and the number of sums in the formula above, respectively. The following **N** lines contain **N** integers each, being the **j**-th number in the **i**-th line the value of m_{ij} ($-10 \le m_{ij} \le 10$ and $m_{ij} == m_{ji}$ for **i, j = 1, ..., N**).

Output

Print a single line with the result of the calculation. Because this number can be very big, output its remainder modulo division by **1000000007** (== 10^9+7).

Example

Input:
4 5
-4 -3 -4 2
-3 -6 1 -8
-4 1 -10 -6
2 -8 -6 0

Output:
308822466