Grid Gradient

Input file:	`standard input`
Output file:	`standard output`
Time limit:	3 seconds
Memory limit:	1024 megabytes

Mr. Nežmah has received a grid with n rows and m columns as a birthday present. He wants to fill it up with numbers from 1 to 4, and as he is obsessed with gradients, he wants the absolute difference between numbers written in cells sharing a side to be exactly one.

As he is even more obsessed with counting stuff, help him find the number of such grids modulo 998 244 353!

Input

The first line contains integers n and m ($1 \leq n, m \leq 24$).

Output

In a single line, output the number of such grids modulo 998 244 353.

Examples

standard input	standard output
1 2	6
3 2	34
7 10	657297226

Note

In the first example, there are exactly six ways to fill up such a grid. They are the following: $(1, 2), (2, 1), (2, 3), (3, 2), (3, 4), (4, 3)$.