

## E. Another Filling the Grid

time limit per test: 1 second

memory limit per test: 256 megabytes

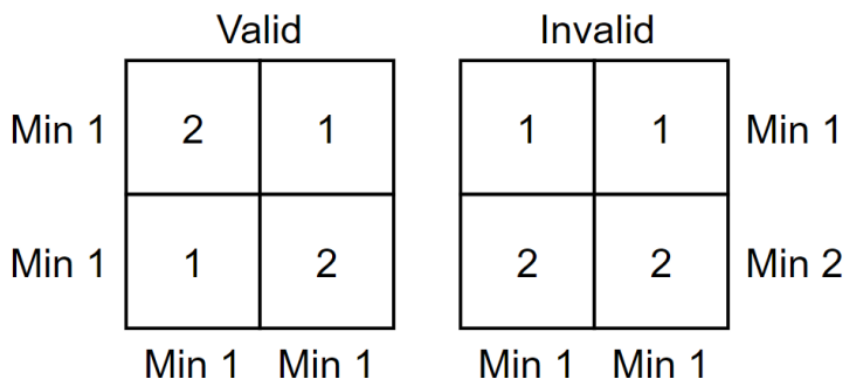
input: standard input

output: standard output

You have  $n \times n$  square grid and an integer  $k$ . Put an integer in each cell while satisfying the conditions below.

- All numbers in the grid should be between 1 and  $k$  inclusive.
- Minimum number of the  $i$ -th row is 1 ( $1 \leq i \leq n$ ).
- Minimum number of the  $j$ -th column is 1 ( $1 \leq j \leq n$ ).

Find the number of ways to put integers in the grid. Since the answer can be very large, find the answer modulo  $(10^9 + 7)$ .



These are the examples of valid and invalid grid when  $n = k = 2$ .

### Input

The only line contains two integers  $n$  and  $k$  ( $1 \leq n \leq 250, 1 \leq k \leq 10^9$ ).

### Output

Print the answer modulo  $(10^9 + 7)$ .

### Examples

<b>input</b>	<a href="#">Copy</a>
2 2	
<b>output</b>	<a href="#">Copy</a>
7	

<b>input</b>	<a href="#">Copy</a>
123 456789	
<b>output</b>	<a href="#">Copy</a>
689974806	

### Note

In the first example, following 7 cases are possible.

### Codeforces Round #589 (Div. 2)

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### → Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

[Start virtual contest](#)

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You are registered for practice. You can solve problems unofficially. Results can be found in the contest status and in the bottom of standings.

### → Clone Contest to Mashup

You can clone this contest to a mashup.

[Clone Contest](#)

### → Submit?

Language: GNU G++11 5.1.0

Choose file: 选择文件 未选择任何文件

Be careful: there is 50 points penalty for submission which fails the pretests or resubmission (except failure on the first test, denial of judgement or similar verdicts). "Passed pretests" submission verdict doesn't guarantee that the solution is absolutely correct and it will pass system tests.

[Submit](#)

### → Problem tags

combinatorics dp math

No tag edit access

### → Contest materials

- Announcement (en) ✕
- Tutorial (en) ✕

1	1	2	1	1	2
1	1	1	2	2	1

2	1	1	2	1	1	1	1
1	1	1	1	2	1	1	2

In the second example, make sure you print the answer modulo  $(10^9 + 7)$ .

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