Task Zapina

There is a total of N young programmers which are preparing for the second part of competitive season during a winter camp in ~~Krapina~~ Zagreb. Mr. Malnar, a big promoter of order, discipline and hard work, told the programmers to form a line and gave each of them a certain number (possibly zero) tasks. He gave away a total of **N different** tasks and he knows that the i-th programmer in line will be happy if they got exactly i tasks.

In how many different ways could Mr. Malnar give out the tasks in such a way that **at least one** programmer was happy? Two ways of giving out the tasks are considered different if there exists a programmer and a task such that in one way that programmer received that task while in the other one they didn't.

Input

The first line contains an integer N ($1 \leq N \leq 350$) from task description.

Output

Output the sought number of ways modulo $10^9 + 7$.

Scoring

Subtask	Score	Constraints
1	22	$1 \leq N \leq 7$
2	33	$1 \leq N \leq 20$
3	55	No additional constraints.

Examples

input	**input**	**input**
1	2	314
output	**output**	**output**
1	3	192940893

Clarification of the second example:

Ways of giving out the tasks in which at least one programmer is happy are:

1. First task to first programmer, second task to the second one.
2. Second task to the first programmer, first task to the second one.
3. Both tasks to the second programmer.