

Misc [I]

time limit per test: 1 second
memory limit per test: 256 megabytes
input: standard input
output: standard output
points: 100 · problem code: misc1 · author: glipR

You want to know how many ways you can organise n (and) brackets so the result string is *balanced*, that is, so that every closing) bracket is preceded by an accompanying opening (bracket somewhere earlier in the string.

Examples of all valid organisations with $n = 3$:

- ((()))
- () () ()
- (()) ()
- () (())
- (()) ()

Examples of invalid organisations with $n = 3$:

- ()) (()
-) () (()
- (())) (

Input

Input will consist of a single integer n , representing the number of open and closed brackets we want to organise

Output

Output should be a single integer, representing the number of unique strings of balanced parenthesis of length n . Since this number could be quite large, output the answer modulo $10^9 + 7$

Constraints

- $1 \leq n \leq 1000$

Example

Input

3

Output

5

Input

10

Output

16796