Brackets

Description

Compute the number of valid combinations of n bracket pairs.
For example, there are 14 valid combinations for n = 4 bracket pairs.

```
( ( ( ( ) ) ) )
( ( ( ) ( ) ) )
( ( ( ) ) ( ) )
( ( ( ) ) ) ( )
( ( ) ( ( ) ) )
( ( ) ( ) ( ) )
( ( ) ( ) ) ( )
( ( ) ) ( ( ) )
( ( ) ) ( ) ( )
( ) ( ( ( ) ) )
( ) ( ( ) ( ) )
( ) ( ( ) ) ( )
( ) ( ) ( ( ) )
( ) ( ) ( ) ( )
```

Input

Your program is to read from standard input. In the first line you are given an integer n $(1 \leq n \leq 1,000)$

Output

Your program is to write to standard output. Print the **remainder** of number of valid combinations of n bracket pairs by **1,000,000,007**.

Sample

Input1	Output1
4	8

Input2	Output2
33	925890214