C. Fibonacci

time limit per test: 0.25 seconds
memory limit per test: 256 megabytes

Find the n-th Fibonacci number modulo $10^9 + 7$.

So, you need to find F_n in the sequence defined as $F_0 = 0$, $F_1 = 1$ and $F_i = F_{i-1} + F_{i-2}$ for $i \geq 2$.

Input

An integer n ($0 \leq n \leq 10^{18}$).

Output

Print the answer modulo 1000000007.

Examples

input	Copy
3	
output	**Copy**
2	

input	Copy
6	
output	**Copy**
8	

input	Copy
50	
output	**Copy**
586268941	

Note

The first few terms of Fibonacci sequence are $(0, 1, 1, 2, 3, 5, 8, 13, \ldots)$. In particular, we have $F_0 = 0$, $F_3 = 2$ and $F_6 = 8$. And for the last sample test:

$$F_{50} = 12586269025 \equiv 586268941 \pmod{10^9 + 7}$$

Matrix Exponentiation

Finished

Practice

→ Virtual participation

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You can clone this contest to a mashup.

Clone Contest

→ Submit?

Language: GNU G++20 13.2 (64 bit, win

Choose file: Choose File No file chosen

Submit

→ Last submissions

Submission	Time	Verdict
262934805	May/28/2024 00:20	Accepted
257536452	Apr/21/2024 12:10	Accepted
257536228	Apr/21/2024 12:08	Accepted
252364144	Mar/19/2024 23:57	Wrong answer on test 24
252364069	Mar/19/2024 23:56	Accepted
252363406	Mar/19/2024 23:48	Wrong answer on test 24
252363191	Mar/19/2024 23:46	Accepted
252363155	Mar/19/2024 23:45	Wrong answer on test 24
252363096	Mar/19/2024 23:44	Wrong answer on test 24
252362951	Mar/19/2024 23:43	Wrong answer on test 24