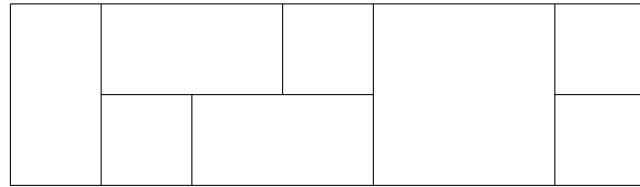

Horizontal puzzle

P74317_en

Have an infinite collection of pieces 1×1 , 1×2 and 2×2 , and you must completely fill a $2 \times n$ rectangle. In how many ways can you do it?

For example, this is one of the many ways for $n = 7$:



Input

Input consists of several cases, each with an n between 1 and 10^4 .

Output

For every case, print the number of ways to fill a $2 \times n$ rectangle. Since this number can be very large, make the computations modulo $10^8 + 7$.

Observation

It may be helpful to compute a quantity similar to the one asked for in the problem.

Sample input 1	Sample output 1
1	2
2	8
3	26
4	90
10000	52273134

Problem information

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