Horizontal puzzle   P74317_en
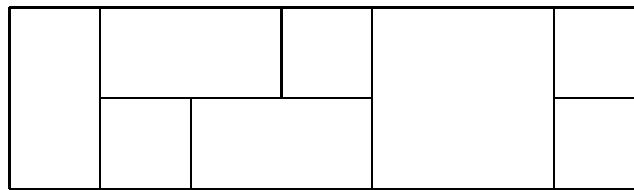
Examen final d'Algorísmia, FME (2014-01-16)

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

Problem information

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