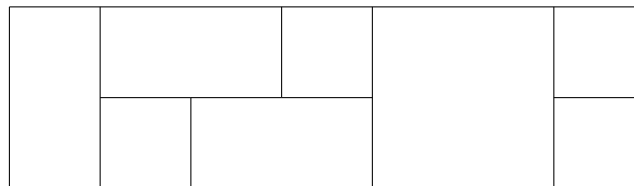

Horizontal puzzle**P74317_en**

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

```
1
2
3
4
10000
```

Sample output 1

```
2
8
26
90
52273134
```

Problem information

Author: Salvador Roura

Translator: Salvador Roura

Generation: 2026-01-25T11:46:46.663Z

© Jutge.org, 2006–2026.

<https://jutge.org>