Symmetry

Description

You are going to fill 2Xn rectangle with 2X1 rectangle tiles. Tiles should not overlap, so exactly n tiles will be used. You want to know how many bilaterally symmetric (horizontally symmetric) and asymmetric tilings there are.
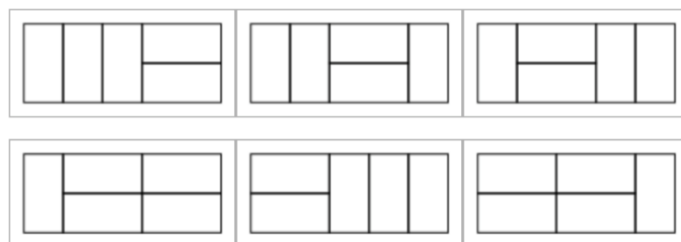

Figure 1) Example of symmetric tilings of n=5

Figure 2) Example of asymmetric tilings of n=5

For example, Figure 1 shows all asymmetric tilings of n=5, and Figure 2 shows all asymmetric tilings of n=5. Given n, count the number of symmetric and asymmetric tilings.

Input

The first line contains a single integer n. (1 ≤ n ≤ 100000)

Output

Print the number of symmetric and asymmetric tilings, separated by 5whitespace. *Since the answer might get too large, print the answers modulo 1,000,000,007*

Sample I/O

Input(s)	Output(s)
5	2 6