

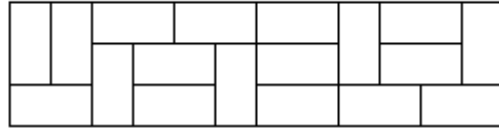
LATGACH3

[English](#)

[Vietnamese](#)

In how many ways can you tile a $3 \times n$ rectangle with 2×1 dominoes?

Here is a sample tiling of a 3×12 rectangle.



Input consists of several test cases followed by a line containing -1. Each test case is a line containing an integer $0 \leq n \leq 30$. For each test case, output one integer number giving the number of possible tilings.

Example

Input:

2
8
12
-1

Output:

3
153
2131