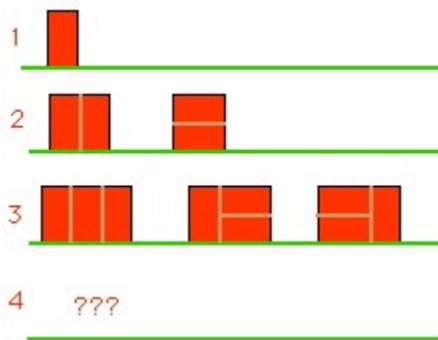


B. Building Brick Walls

Problem Description

Given rectangles of height 2 and width 1, find the number of different patterns we can make with a brick wall of arbitrary width. The rectangle can be rotated in any direction.

Example



HINT: Brute force solutions will time out, work out some examples by hand to arrive at a pattern

Input

Input will be an integer n ($0 \leq n \leq 50$), each on a separate line. End of input will be specified by a 0, which should not be processed.

Output

For each test case, output a count of the number of different wall patterns you can create with n bricks, assuming each brick has height 2, width 1, and can be rotated.

HINT: For C/C++ use unsigned long long type to store the result, for Java users use the standard long type

Sample Input

1
2
3
0

Sample Output

1
2
3