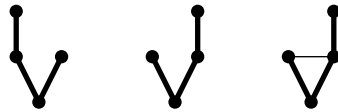


Problem C. Catalanian Forest

Input file: catalonian.in
 Output file: catalonian.out
 Time limit: 2 seconds
 Memory limit: 256 megabytes

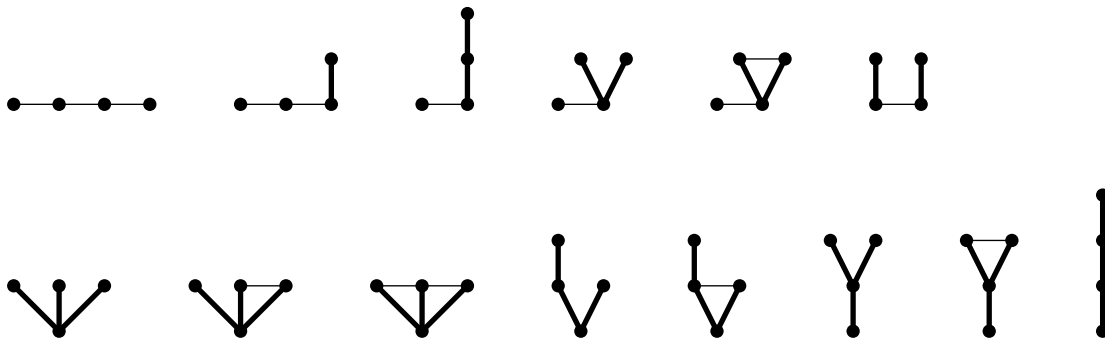
Consider rooted unlabelled trees. For each vertex of the tree let its children be divided to one or more unnamed groups, each child belongs to exactly one group. When drawing such tree, children from the same group are positioned continuously and stroke by a horizontal line. Let us call such tree a *Catalonian tree*. The picture below shows three Catalanian trees with 4 vertices each. The trees grow bottom up. The first two are actually different drawings of the same tree but the last one is different from them, because two root's children are in the same group.



A *Catalonian forest* is the set of one or more Catalanian trees.

Given n find the number of different Catalanian forests with n vertices in all the trees together.

The picture below shows all 14 Catalanian forests with 4 vertices. Roots of the trees of the same forest are connected by a line for clarity. The trees grow bottom up.



Input

The input file contains multiple test cases. Each test case consists of an integer n on a line by itself ($1 \leq n \leq 60$). The last line of the input file contains 0, it must not be processed.

Output

For each test case output one number — the number of Catalanian forests with n vertices.

Examples

	catalonian.in	catalonian.out
1	1	1
2	2	2
3	3	5
4	4	14
5	5	42
0		