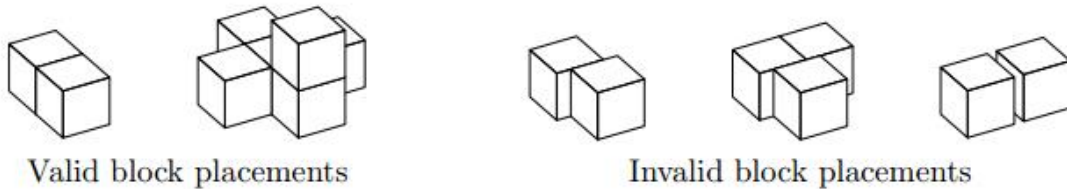


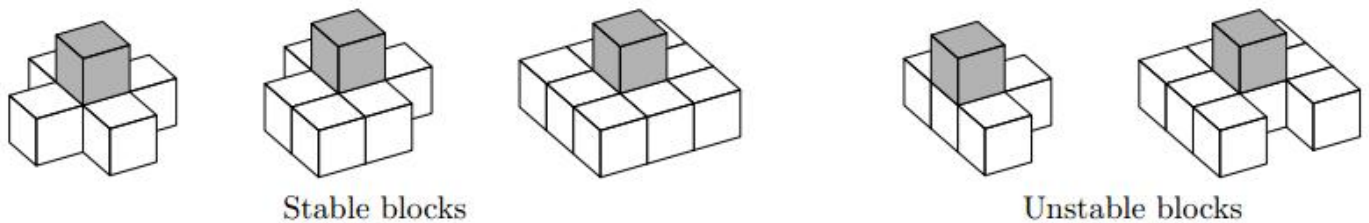
AZTEC PYRAMID

Aztec emperor Cuitl'ahuac is going to build a pyramid in his honor. This pyramid should be taller than previous ones.

The Aztec pyramid is build out of stone blocks. Each block is $1 \times 1 \times 1$ -hunab cube. Cuitl'ahuac places first block on the ground during the foundation ceremony. Each of the following blocks must share a face with at least one of the previous blocks.



The block is stable if it stands on the ground, or it stands on another block, that has a block or the ground next to each face. To stand the test of time the pyramid must be stable i.e. each block of it must be stable.



Cuitl'ahuac asks you to determine the height of the tallest stable pyramid that can be built out of available blocks.

Input

The only line of the input file contains a single integer number—the number of available blocks, including the first one ($1 \leq n \leq 10^9$).

Output

Output the height of the tallest stable pyramid that may be built out of blocks. The height must be output in hunabs.

Examples

Nº	stdin	stdout
1	6	2
2	5	1
3	20	3