Pyramid Building (pyramid)

The *Scrasse* wants to celebrate his latest achievements in the field of competitive programming by building a huge pyramid, that should withstand the test of time and allow him to be remembered across history. Thus, he spent all of his savings to buy N cubic blocks of sandstone rock. Now he only needs to arrange them in order to make a pyramid!

As everyone knows, pyramids are built as a series of square levels one on top of each other. The layer on top will consist of only one block. The layer just below will consist of a square of 2×2 blocks, the following one will consist of a square of 3×3 blocks, and so on until the last layer of $L \times L$ blocks.

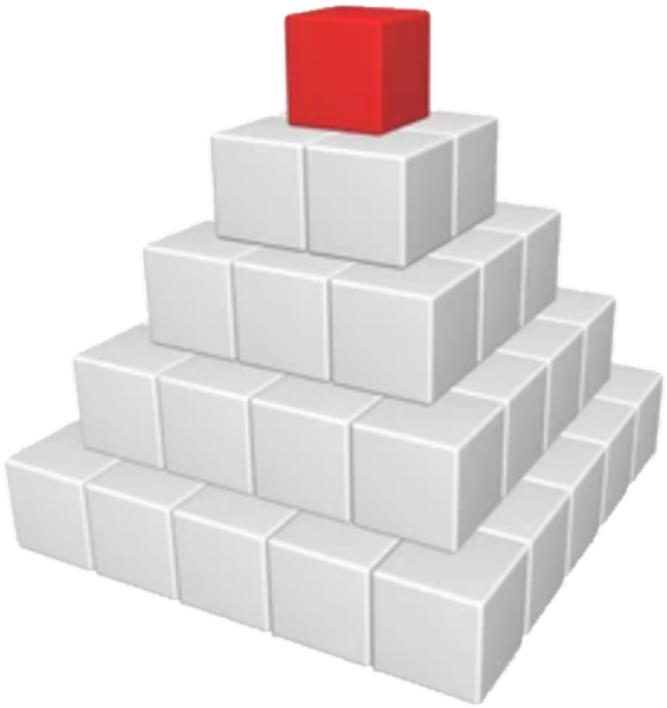

Figure 1: Schematic plan of a pyramid with $L = 5$ layers.

How many layers L can Valerio build with the N blocks that he has got?

> ☞ Among the attachments of this task you may find a template file `pyramid.*` with a sample incomplete implementation.

Input

The input file consists of:

- a line containing integer N.

Output

The output file must contain a single line consisting of integer L.

Constraints

- $1 \leq N \leq 1\,000\,000\,000$.

Scoring

Your program will be tested against several test cases grouped in subtasks. In order to obtain the score of a subtask, your program needs to correctly solve all of its test cases.

– **Subtask 1** (0 points) Examples.

– **Subtask 2** (20 points) $N \leq 100$.

– **Subtask 3** (42 points) $N \leq 100\,000$.

– **Subtask 4** (38 points) No additional limitations.

Examples

input	output
5	2
60	5

Explanation

In the **first sample case**, he can use all five blocks to build a pyramid of two levels: one block for the top level and $2 \times 2 = 4$ blocks for the bottom level.

In the **second sample case**, he can build the pyramid in Figure 1, using $1+2\times2+3\times3+4\times4+5\times5 = 55$ blocks, leaving 5 blocks unused.