

B. The Pharaohs

time limit per test: 2 seconds🕒
memory limit per test: 256 megabytes

The Pharaohs of ancient Egypt were known for their brilliance in Mathematics.

The Great Pyramids are one of the amazing masterpieces that were made by them. Since the Pyramid is very Huge, they numbered each block sequentially from the top to the bottom starting from number 1. Such that the first top row contains *One* block, the second contains *Two* blocks, the third *Three* blocks and so on . . . In general each row *i* contains *i* blocks.

If you gave them a certain block number *N* they could tell you on which row of the pyramid it lies on.

So your great ancestors are wondering are you smart enough to figure out the answer?

Input

The first line of input contains several test cases *T* ($1 \leq T \leq 10^5$).

For each test case, there is a single integer *N* ($1 \leq N \leq 10^{18}$), indicating the given block number.

Output

For each test case print the row number which the block lies on.

Example

input	Copy
3 1 2 6	
output	Copy
1 2 3	

Note


sample test:

1
2 3
4 5 6
1 lies in the first row, 2 lies in the second row, 6 lies in the third row.

ICPC Assiut University Training - Juniors Phase 1 Sheets-2022

Public

Participant




→ Group Contests

- Juniors Phase 1 Practice #5 (Bitmask, Bitset, Bits)
- Juniors Phase 1 Practice #4 (Binary search , Two pointers)
- Juniors Phase 1 Practice #3 (STL 2)
- Juniors Phase 1 Practice #2 (STL 1)
- Juniors Phase 1 Practice #1 (Prefix sum , Frequency Array)

Juniors Phase 1 Practice #4 (Binary search , Two pointers)

Finished

Practice



→ About Time Scaling

This contest uses time limits scaling policy (depending on a programming language). The system automatically adjusts time limits by the following multipliers for some languages. Despite scaling (adjustment), the time limit cannot be more than 30 seconds. Read the details by the [link](#).

→ Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

→ Submit?

Language: GNU G++20 13.2 (64 bit, win

Choose file: Choose File No file chosen

Submit

→ Last submissions

Submission	Time	Verdict
312317492	Mar/25/2025 15:24	Accepted
312316277	Mar/25/2025 15:14	Wrong answer on test 2
312316186	Mar/25/2025 15:14	Wrong answer on test 5