

Problem B. Coins And Triangle

Time limit 1500 ms

Code length Limit 50000 B

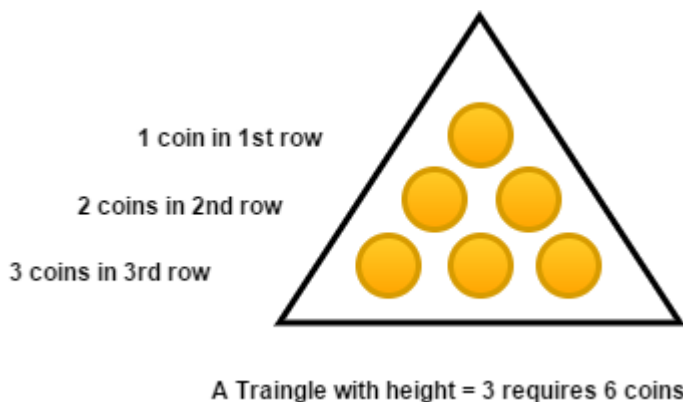
OS Linux

Read problems statements in [Mandarin Chinese](#), [Russian](#) and [Vietnamese](#) as well.

Chef belongs to a very rich family which owns many gold mines. Today, he brought N gold coins and decided to form a triangle using these coins. Isn't it strange?

Chef has a unusual way of forming a triangle using gold coins, which is described as follows:

- He puts 1 coin in the 1st row.
- then puts 2 coins in the 2nd row.
- then puts 3 coins in the 3rd row.
- and so on as shown in the given figure.



Chef is interested in forming a triangle with maximum possible height using at most N coins. Can you tell him the maximum possible height of the triangle?

Input

The first line of input contains a single integer T denoting the number of test cases.

The first and the only line of each test case contains an integer N denoting the number of gold coins Chef has.

Output

For each test case, output a single line containing an integer corresponding to the maximum possible height of the triangle that Chef can get.

Constraints

- $1 \leq T \leq 100$
- $1 \leq N \leq 10^9$

Subtasks

- Subtask 1 (48 points) : $1 \leq N \leq 10^5$
- Subtask 2 (52 points) : $1 \leq N \leq 10^9$

Sample 1

Input	Output
3	2
3	2
5	3
7	

Test 1: Chef can't form a triangle with height > 2 as it requires atleast 6 gold coins. **Test 2:** Chef can't form a triangle with height > 2 as it requires atleast 6 gold coins. **Test 3:** Chef can't form a triangle with height > 3 as it requires atleast 10 gold coins.