

# Coins And Triangle

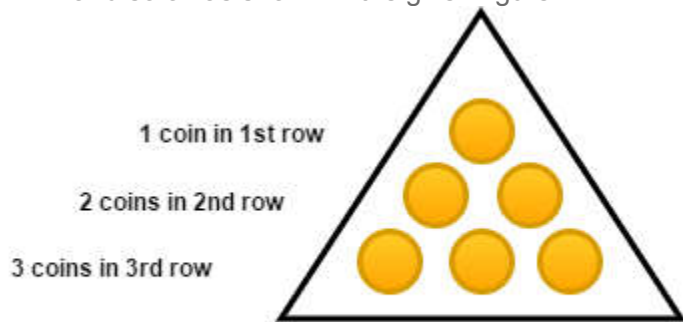
Problem Code: **TRICOIN**

---

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 **1<sup>st</sup>** row.
- then puts **2** coins in the **2<sup>nd</sup>** row.
- then puts **3** coins in the **3<sup>rd</sup>** row.
- and so on as shown in the given figure.



**A Traingle with height = 3 requires 6 coins**

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) :  $1 \leq N \leq 10^9$

---

### Example

#### Input

3

3

5

7

#### Output

2

2

3

---

### Explanation

- **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.