Hard Summation

The summation of first **N** positive integers is **(N * (N + 1)) / 2**. You are given a number **X**.
Find out the maximum value of N so that **1 + 2 + 3 + ... + N <= X i.e. (N * (N + 1)) / 2 <= X.**

Input Format

The first line contains a number **T (1 ≤ T ≤ 100)** number of test cases.

Each test case contains a number **X (1 ≤ N ≤ 10^18)**.

Constraints

empty

Output Format

For each test case, print the maximum value of N.

Sample Input 0

```
2
21
5
```

Sample Output 0

```
6
2
```

Explanation 0

In the first test case:
1 + 2 + 3 + 4 + 5 + 6 = 21 which is ≤ 21 (X = 21, in this case). Here N = 6 is the maximum possible value.

In the second test case:
1 + 2 = 3 which is <= 5 (N = 8 in this case). If we consider N = 3, then the summation would be 6 which is >= 5. Thus N = 2 is the required answer.