



Day 8: Morty is in the middle

locked

Problem

Submissions

Leaderboard

Discussions

Morty is in the middle of his Math exams and he comes across the question that mentioned (3,4,5) and requires him to check if that is a Pythagorean triplet. Unfortunately, he forgot all the lessons that Rick gave him and also forgot the exact formula for the triplets, he remembers only that the formula was some equation with squared numbers. So, he came up with the following formula: $z = x^2 - y$, where z is the hypotenuse, and x , and y are the sides of the right-angled triangle.

Test results came out, and he realized he got the correct answer for the question yet didn't score marks on it.

Rick then told him that the formula he used was not the correct one to check for Pythagorean triplets. But since it worked on the question, Morty got wondering on how many other triplets of integers (x, y, z) with $1 \leq x \leq y \leq z \leq n$ would his formula work for.

Since Rick is busy working on developing the dark energy fuel, Morty needs your help to find how many of these triplets exist.

Input Format

The first line contains one integer m ($1 \leq m \leq 100000$) — the number of test cases.

Each test case consists of one line containing one integer n ($1 \leq n \leq 1000000000$).

Constraints

- $(1 \leq m \leq 100000)$
- $(1 \leq n \leq 1000000000)$

Output Format

For each test case, print one integer — the number of triples of integers (x,y,z) with $1 \leq x \leq y \leq z \leq n$ such that they are Pythagorean based on the actual definition and the formula that Morty misinterpreted during his exam.

Sample Input 0

```
3
3
6
9
```

Sample Output 0

```
0
1
1
```

Explanation 0

The only Pythagorean triple satisfying $z = x^2 - y$ with $1 \leq x \leq y \leq z \leq 9$ is (3,4,5); that's why the answer for $n=3$ is 0, and the answer for $n=6$ (and for $n=9$) is 1.



Submissions: 30

Max Score: 60

Difficulty: Easy

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