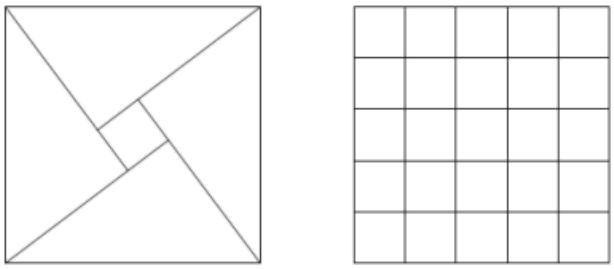
Project Euler #139: Pythagorean tiles

This problem is a programming version of Problem 139 from projecteuler.net

Let (a, b, c) represent the three sides of a right angle triangle with integral length sides. It is possible to place four such triangles together to form a square with length c.

For example, $(3, 4, 5)$ triangles can be placed together to form a 5 by 5 square with a 1 by 1 hole in the middle and it can be seen that the 5 by 5 square can be tiled with twenty-five 1 by 1 squares.



However, if $(5, 12, 13)$ triangles were used then the hole would measure 7 by 7 and these could not be used to tile the 13 by 13 square.

Given P, how many Pythagorean triangles would allow such a tiling to take place and whose perimeter is less than P?

Input Format

The first line of input contains T, the number of test cases.

Each test case consists of a single line containing a single integer, P.

Constraints

$1 \leq T \leq 10^5$

In the first test case: $1 \leq P \leq 10^4$
In the second test case: $1 \leq P \leq 10^8$
In the third test case: $1 \leq P \leq 10^{18}$

Output Format

For each test case, output a single line containing a single integer, the answer for that test case.

Sample Input

```
1
15
```

Sample Output

```
1
```