

# Project Euler #223: Almost right-angled triangles I



This problem is a programming version of [Problem 223](#) from [projecteuler.net](#)

Let us call an integer sided triangle with sides  $a \leq b \leq c$  barely acute if the sides satisfy  $a^2 + b^2 = c^2 + 1$ .

How many barely acute triangles are there with perimeter no greater than  $N$ ?

## Input Format

First line of each test file contains a single integer  $Q$  that is the number of queries per test file.  $Q$  lines follow, each with a single integer  $N$ .

## Constraints

- $1 \leq Q \leq 50$
- $10 \leq N \leq 5 \times 10^7$

## Output Format

Print exactly  $Q$  lines with an answer for the corresponding query on each.

## Sample Input 0

```
1
21
```

## Sample Output 0

```
12
```

## Explanation 0

The only barely acute triangles with perimeter no greater than **21** are

$(1, 1, 1), (1, 2, 2), (1, 3, 3), (1, 4, 4), (1, 5, 5), (1, 6, 6), (1, 7, 7), (1, 8, 8), (5, 5, 7), (1, 9, 9), (4, 7, 8), (1, 10, 10)$ ; twelve total.