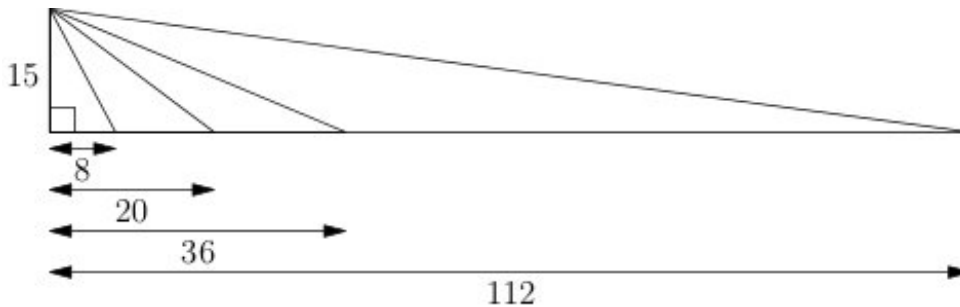# Shared cathetus (easy)

For any integer **n**, we define **F(n)** as the number of ways in which **n** can be the cathetus (leg) of a Pythagorean triangle.

For example, there is exactly four Pythagorean triangles with 15 as a length for a cathetus.

(8 **15** 17), (**15** 20 25), (**15** 36 39), (**15** 112 113)

Thus **F(15) = 4**.

Input

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

Each of the next **T** lines contains a single integer **n**.

Output

For each test case, print **F(n)** on a single line.

Example

Input:
3
5
10
15

Output:
1
1
4

Constraints

0 < T < 10^5
0 < n < 10^9

For your information, my C code ran in 0.08s, whereas my python3 one ran in 0.90s. (Edit 2017-02-11, after compiler changes)