

# Project Euler #42: Coded triangle numbers

This problem is a programming version of [Problem 42](#) from [projecteuler.net](#)

The  $n^{th}$  term of a sequence of triangle numbers is given by,

$$t_n = \frac{1}{2}n(n+1)$$

so the first ten triangle numbers are:

1, 3, 6, 10, 15, 21, 28, 36, 45, 55, ...

You are given an integer. If it is a triangular number  $t_n$ , print the term  $n$  corresponding to this number, else print  $-1$

## Input Format

First line of input contains an integer  $T$  denoting the number of testcases. Each of the next  $T$  lines contains an integer.

## Constraints

$$1 \leq T \leq 10^5$$

$$1 \leq t_n \leq 10^{18}$$

## Output Format

Print the answer corresponding to each test case in a new line.

## Sample Input

```
3
2
3
55
```

## Sample Output

```
-1
2
10
```