

# Project Euler #12: Highly divisible triangular number

## Problem Statement

This problem is a programming version of [Problem 12](#) from [projecteuler.net](#)

The sequence of triangle numbers is generated by adding the natural numbers. So the 7'th triangle number would be  $1 + 2 + 3 + 4 + 5 + 6 + 7 = 28$ . The first ten terms would be:

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

Let us list the factors of the first seven triangle numbers:

1 : 1  
3 : 1, 3  
6 : 1, 2, 3, 6  
10 : 1, 2, 5, 10  
15 : 1, 3, 5, 15  
21 : 1, 3, 7, 21  
28 : 1, 2, 4, 7, 14, 28

We can see that 28 is the first triangle number to have over five divisors.

What is the value of the first triangle number to have over  $N$  divisors?

## Input

First line  $T$ , the number of testcases. Each testcase consists of  $N$  in one line.

## Output

For each testcase, print the required answer in one line.

## Constraints

$1 \leq T \leq 10$   
 $1 \leq N \leq 10^3$

## Sample input

```
4
1
2
3
4
```

## Sample output

```
3
6
6
28
```