Project Euler #12: Highly divisible triangular number

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:

$1, 3, 6, 10, 15, 21, 28, 36, 45, 55, \ldots$

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 Format

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

Constraints

- $1 \leqslant T \leqslant 10$
- $1 \leqslant N \leqslant 10^3$

Output Format

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

Sample Input

```
4
1
2
3
4
```

Sample Output

```
3
6
6
28
```

Explanation

Explained in statement.