

Project Euler #195: Inscribed circles of triangles with one angle of 60 degrees

This problem is a programming version of [Problem 195](#) from [projecteuler.net](#)

Let's call an integer sided triangle with exactly one angle of 60 degrees a 60-degree triangle.

Let r be the radius of the inscribed circle of such a 60-degree triangle.

There are 1234 60-degree triangles for which $r \leq 100$.

Let $T(n)$ be the number of 60-degree triangles for which $r \leq n$, so $T(100) = 1234$, $T(1000) = 22767$, and $T(10000) = 359912$.

Find $T(n)$ for some n .

Input Format

First line of each test file contains a single integer Q which is the number of queries in the file. Q lines follow with a single integer n_i on each.

Constraints

- $1 \leq Q \leq 10$
- $1 \leq n_i \leq 10^9$
- Sum of all n_i in a test file $\leq 10^9$

Output Format

Output exactly Q lines with a single integer on each. The integer of the i -th line should be the answer for the query with n_i as an input.

Sample Input 0

```
3
100
1000
10000
```

Sample Output 0

```
1234
22767
359912
```

