Problem C. Umbrella Queries

- Time Limit: 2 sec

Problem Statement

Micchan noticed that an umbrella is a regular polygon when looking from above. So, she created the following problem.

Umbrella Query

A regular N polygon has N edges and $\frac{N(N-1)}{2} - N$ diagonals. Consider the union of them, which includes $\frac{N(N-1)}{2}$ line segments.

How many pairs of line segments satisfy the following 2 conditions?

- The 2 line segments have a common endpoint. In other words, they have a common point at one of the vertices of the regular N polygon.
- The 2 line segments are perpendicular.

Micchan has given T of the above problems. However, her friend cannot solve too many requests. Answer each problem on her behalf.

Input

```
T
N_1
N_2
⋮
N_T
```

The input satisfies the following constraints.

- All inputs consist of integers.
- $1 \le T \le 10^5$
- $3 \le N_i \le 10^9$

Output

Output the answer in T lines. On the i-th line, output the answer to the problem when $N = N_i$. Add a new line at the end of each line.

Sample Input	Sample Output
3 4 3 1000000000	4 0 499999999000000000

In Sample Input 1, you count only pairs of line segments that intersect perpendicularly at the vertices of the square.