Project Euler #6: Sum square difference

This problem is a programming version of Problem 6 from projecteuler.net

The sum of the squares of the first ten natural numbers is, $1^2 + 2^2 + ... + 10^2 = 385$. The square of the sum of the first ten natural numbers is, $(1 + 2 + \cdots + 10)^2 = 55^2 = 3025$. Hence the absolute difference between the sum of the squares of the first ten natural numbers and the square of the sum is $3025 - 385 = 2640$.

Find the absolute difference between the sum of the squares of the first N natural numbers and the square of the sum.

Input Format

First line contains T that denotes the number of test cases. This is followed by T lines, each containing an integer, N.

Constraints

- $1 \leqslant T \leqslant 10^4$
- $1 \leqslant N \leqslant 10^4$

Output Format

Print the required answer for each test case.

Sample Input 0

```
2
3
10
```

Sample Output 0

```
22
2640
```

Explanation 0

- For $N = 3$, $(1 + 2 + 3)^2 - (1^2 + 2^2 + 3^2) \Rightarrow 22$
- For $N = 10$, $(1 + 2 + \cdots + 10)^2 - (1^2 + 2^2 + \cdots + 10^2) \Rightarrow 2640$