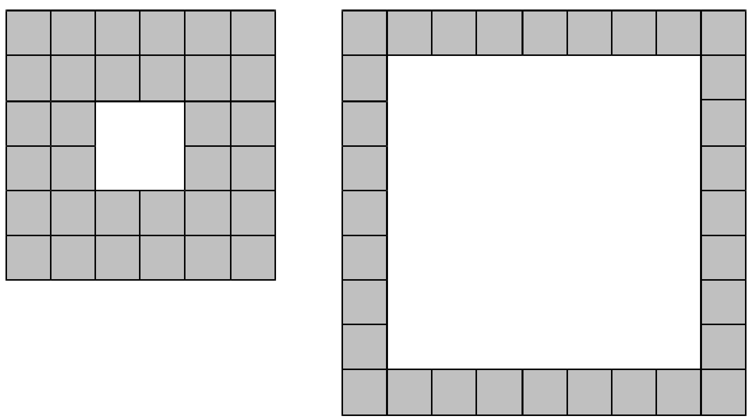
Project Euler #174: Counting the number of "hollow" square laminae that can form one, two, three, ... distinct arrangements.

This problem is a programming version of Problem 174 from projecteuler.net

We shall define a square lamina to be a square outline with a square "hole" so that the shape possesses vertical and horizontal symmetry.

Given eight tiles it is possible to form a lamina in only one way: 3×3 square with a 1×1 hole in the middle. However, using thirty-two tiles it is possible to form two distinct laminae.



If t represents the number of tiles used, we shall say that $t = 8$ is type $L(1)$ and $t = 32$ is type $L(2)$.

Let $N_k(n)$ be the number of $t \leq k$ such that t is type $L(n)$; for example, $N_{10^6}(15) = 832$.

Given k, calculate $\sum_{n=1}^{10} N_k(n)$.

Input Format

The first line of input contains an integer T which is the number of testcases.
Each of the following T lines contain one integer k.

Constraints

- $1 \leq T \leq 10^6$

- $4 \leq k \leq 10^6$

Output Format

For each testcase output the only integer which is the answer to the problem.

Sample Input 0

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1
100
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Sample Output 0

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24
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Explanation 0

For $k = 100$:

- $N_k(1) = \{8, 12, 16, 20, 28, 36, 44, 52, 68, 76, 92, 100\}$
- $N_k(2) = \{24, 32, 40, 56, 60, 64, 84, 88\}$
- $N_k(3) = \{48, 72, 80\}$
- $N_k(4) = \{96\}$
- $N_k(5) = N_k(6) = \cdots = N_k(10) = \varnothing$