

# A Summatory

$f(n)$  is defined as:  $f(n) = 1^3 + 2^3 + 3^3 + \dots + n^3$ , so it is the sum of the cubes of all natural numbers up to  $n$ .

In this problem you are about to compute,

$$f(1) + f(2) + f(3) + \dots + f(n)$$

## Input

The first line is an integer  $T$  ( $1 \leq T \leq 100,000$ ), denoting the number of test cases. Then,  $T$  test cases follow.

For each test case, there is an integer  $n$  ( $1 \leq n \leq 1,000,000$ ) written in one line.

## Output

For each test case output the result of the summatory function described above.

Since this number could be very large, output the answer modulo 1,000,000,003.

## Example

**Input:**

3  
2  
10  
3

**Output:**

10  
7942  
46