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Summing the N series ☆

Points: 477.99 Rank: 2874

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You are given a sequence whose n^{th} term is

$$T_n = n^2 - (n-1)^2$$

You have to evaluate the series

$$S_n = T_1 + T_2 + T_3 + \cdots + T_n$$

Find $S_n \bmod (10^9 + 7)$.

Input Format

The first line of input contains T, the number of test cases.

Each test case consists of one line containing a single integer n.

Constraints

- $1 \leq T \leq 10$
- $1 \leq n \leq 10^{16}$

Output Format

For each test case, print the required answer in a line.

Sample Input 0

```
2
2
1
```

Sample Output 0

```
4
1
```

Explanation 0

Case 1: We have $4 = 1 + 3$

Case 2: We have $1 = 1$

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Difficulty Medium
Max Score 20
Submitted By 16537

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MORE DETAILS

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Current Buffer (saved locally, editable) Java 7

```
1  import java.io.*;
2  import java.math.*;
3  import java.text.*;
4  import java.util.*;
5  import java.util.regex.*;
6
7  public class Solution {
```

```
8
9     /*
10     * Complete the summingSeries function below.
11     */
12    static int summingSeries(long n) {
13        /*
14         * Write your code here.
15         */
16
17    }
18
19    private static final Scanner scanner = new Scanner(System.in);
20
21    public static void main(String[] args) throws IOException {
22        BufferedWriter bufferedWriter = new BufferedWriter(new
FileWriter(System.getenv("OUTPUT_PATH")));
23
24        int t = Integer.parseInt(scanner.nextLine().trim());
25
26        for (int tItr = 0; tItr < t; tItr++) {
27            long n = Long.parseLong(scanner.nextLine().trim());
28
29            int result = summingSeries(n);
30
31            bufferedWriter.write(String.valueOf(result));
32            bufferedWriter.newLine();
33        }
34
35        bufferedWriter.close();
36    }
37}
38
```

Line: 1 Col: 1

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