Number of Intersecting Diagonals

? Ask Doubt

Time-Limit: 1 sec Score: 100.00/100 Difficulty :

Memory: 256 MB Accepted Submissions: 100 Relevant For: AZ-201

Description

Find the number of unordered pairs of intersecting diagonals in the Convex *N*-gon. The intersecting point should be inside the polygon.

Input Format

The first line contains *T* ($1 \le T \le 100000$), the number of test cases.
Each of the next *T* lines contains a positive integer *N* denoting the number of sides of convex polygon ($3 \le N \le 10^9$).

Output Format

For each test case, print a single number denoting the number of intersecting diagonals in the convex *N*-gon. Since answer can be large, print it with modulo 1000000007.

Sample Input 1

Copy

```
2
4
5
```

Sample Output 1

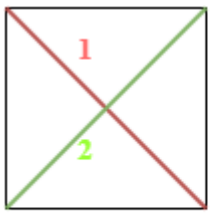
Copy

```
1
5
```

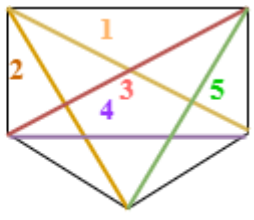
Note

Explanation 1:
(1, 2)

Explanatino 2:
(1, 3), (1, 5), (2, 3), (2, 4), (4, 5)



Example 1



Example 2

C++14[GCC]

Submit

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1
```