

6362 Triangle

You have a piece of iron wire with length of n unit. Now you decide to cut it into several ordered pieces and fold each piece into a triangle satisfying:

- All triangles are integral.
- All triangles are pairwise similar.

You should count the number of different approaches to form triangles. Two approaches are considered different if either of the following conditions is satisfied:

- They produce different numbers of triangles.
- There exists i that the i -th (again, pieces are ordered) triangle in one approaches is not congruent to i -th triangle in another plan.

The following information can be helpful in understanding this problem.

- A triangle is integral when all sides are integer.
- Two triangles are congruent when all corresponding sides and interior angles are equal.
- Two triangles are similar if they have the same shape, but can be different sizes.
- For $n = 9$ you have 6 different approaches to do so, namely

(1, 1, 1) (1, 1, 1) (1, 1, 1)

(1, 1, 1) (2, 2, 2)

(2, 2, 2) (1, 1, 1)

(1, 4, 4)

(2, 3, 4)

(3, 3, 3)

where (a, b, c) represents a triangle with three sides a, b, c .

Input

There are several test cases.

For each test case there is a single line containing one integer n ($1 \leq n \leq 5 * 10^6$).

Input is terminated by EOF.

Output

For each test case, output one line “Case X : Y ” where X is the test case number (starting from 1) and Y is the number of approaches, moduled by $10^9 + 7$.

Sample Input

1
2
3
4
5
6
8
9
10
11
12
15
19
20
100
1000

Sample Output

Case 1: 0
Case 2: 0
Case 3: 1
Case 4: 0
Case 5: 1
Case 6: 2
Case 7: 1
Case 8: 6
Case 9: 3
Case 10: 4
Case 11: 10
Case 12: 25
Case 13: 10
Case 14: 16
Case 15: 525236
Case 16: 523080925