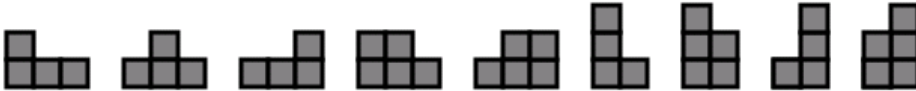In the previous problem, we assume the perimeter of the figure equals to p, how many battlefields are possible? For example, there are no battlefields possible for $p < 8$, but two for $p = 8$:

Here are the nine battlefields for p=10:

You're asked to output the number of battlefields modulo 987654321.

Input

There will be at most 25 test cases, each with a single integer p ($1 \leq p \leq 10^9$), the perimeter of the battlefield. The input is terminated by $p = 0$.

Output

For each test case, print a signle line, the number of battlefields, modulo 987654321.

Sample Input

```
8
9
10
0
```

Sample Output

```
2
0
9
```