

A Simple Photo Cryptography

Description

As we know, Yen-Jen is a master of photo cryptography, and YP is a fan of Yen-Jen, so he wants to learn something about cryptography to add some topics he can chat with Yen-Jen.

Yen-Jen tells YP that solving the following problem is the first step to become a master of cryptography:

Given an integer x , compute the following function under modulo 100000007.

$$f(x) = 155136880301x^2 - 998244353x + 71227122$$

Now, given x , please compute $f(x)$ under modulo 100000007.

Input

The first line of the input contains an integer T denotes the number of test cases in this input.

Each test case contains one line with one integer x .

- $1 \leq T \leq 10^5$
- $0 \leq x \leq 10^{18}$

Output

For each test case, output $f(x)$ modulo 100000007 in one line.

Sample Input

1
0

Sample Output

71227122