Fibonacci Polynomial

Problem description.

The Fibonacci numbers defined as **$f(n) = f(n-1) + f(n-2)$** where **$f0 = 0$** and **$f1 = 1$**.

We define a function as follows **$D(n,x) = x + x^2 + 2x^3 + 3x^4 + 5x^5 + 8x^6 + \ldots + f(n)x^n$**

Given two integers n and x, you need to compute **D(n,x)** since the output can be very large output the result modulo **1000000007 (1e9+7)** .

Input

Input description.

- The first line of the input contains an integer **T** denoting the number of test cases. The description of **T** test cases follows.
- The first line of each test case contains two integers **n** and **x** as described above.

Output

Output description.

- For each test case, output **D(n,x)%1000000007** in a seperate line.

Constraints

Should contain all the constraints on the input data that you may have. Format it like:

- **$1 \le T \le 1000$**
- **$0 \le n \le 10^{15}$**
- **$0 \le x \le 10^{15}$**

Example

Input:
1
7 11

Output:
268357683

Explanation

D(7,11) = 11 + 11^2 + 2(11^3) + 3(11^4) + 5(11^5) + 8(11^6) + 13(11^7) = 268357683