Panda has become a scientist recently. In his laboratory, there are infinite number of chambers where a chamber number ***K*** is connected to a chamber number ***K-1***.

The numbering of chambers start from ***0***. Initially, ***X*** number of particles are present in the chamber number ***0***. The number of particles present in **chamber** ***K*** is ***K*** times the number of particles present in **chamber** ***K-1***. You are supposed to help Panda in finding out the number of particles in a given chamber number ***N***.

**Note:** The number of particles in chamber ***K*** cannot be calculated until the number of particles in chamber ***K-1*** are calculated.

**Input Format:**

The first line will contain the integer ***T***, the number of test cases. Each test case consists of two space separated integers ***N***and ***X***.

**Output Format:**

For each test case, output the answer to Panda's query. Since the output can be very large, output the answer modulo***106+3***.

**Constraints:**

***1*** <= ***T*** <= ***105***

* **Subtask 1: (20 points)**  
  ***1 <= N, X*** <= ***105***
* **Subtask 2: (80 points)**  
  ***1 <= N, X*** <= ***1018***

**Sample Input**

[(Plaintext Link)](https://he-s3.s3.amazonaws.com/media/hackathon/may-easy-challenge-15/problems/panda-and-chain-reaction/3ef190a4-f-sample-input-3ef18d5.txt?Signature=xydSoyVrtZXjB0P1Ghc7RP9SKBw%3D&Expires=1430938432&AWSAccessKeyId=AKIAJLE6MUHDYS3HN6YQ)

2

1 3

2 1

**Sample Output**

[(Plaintext Link)](https://he-s3.s3.amazonaws.com/media/hackathon/may-easy-challenge-15/problems/panda-and-chain-reaction/3f07b4f6-f-sample-output-3f07b1c.txt?Signature=pno0YQXEq5EcT%2FAmgD9FWOVJHsU%3D&Expires=1430938432&AWSAccessKeyId=AKIAJLE6MUHDYS3HN6YQ)

3

2

Explanation

Case 1: For first test case, initially there were 3 particles.   
In Chamber K=1, the number of particles became 1\*3 = 3.

Case 2: Initially, there is only 1 particle.  
In Chamber K=1, the number of particle became 1\*1 = 1.  
In Chamber K=2, the number of particle became 2\*1 = 2.