

Find GCD

Input file: **standard input**
Output file: **standard output**
Time limit: 1 second
Memory limit: 256 megabytes

Pt is a brilliant mathematician who has just discovered the power of the Euclidean algorithm for finding the GCD of two numbers. Excited to test her new knowledge, she shares her discovery with her friend, Kalu, who challenges her with a problem to solve. She needs your help to solve the problem.

The problem is to find the GCD of two numbers, n raised to the factorials of a and b , respectively, and then take the result modulo 1000000007. In other words, you are given three integers: a , b , and n , and you must find the value of:

$$GCD(n^{a!}, n^{b!}) \bmod 1000000007$$

Input

The first line of input consists of an Integer T ($1 \leq T \leq 10^5$) denoting the number of test cases. Each of the following T lines contains 3 integers a , b and n ($0 \leq a, b, n \leq 10^5$).

Output

For each test case print the GCD in a separate line.

Example

standard input	standard output
3	2
1 1 2	4
1 7 4	64
3 3 2	

Note

$GCD(p, q)$ denotes the greatest common divisor of p and q .

$x!$ denotes factorial of x i.e. $x! = 1 \cdot 2 \cdot 3 \cdot \dots \cdot x$ (in particular, $0! = 1$).

a modulo b (shortened $a \bmod b$) is the only integer c , such that $0 \leq c < b$ and $a - c$ is divisible by b .