Cycle

Given a sequence of number generated by evaluating $(A * B^i)$ % N, where A is the starting number, B is the multiplier, i is the i-th number, and N is the modulo. Find the size of the cycle. For example, suppose A = 2, B = 2, and N = 5. Then the sequence will be 2 -> 4 -> 3 -> 1 -> 2. The size of cycle is 4.

Format Input
The input begins with an integer T, indicating the number of test case. In each test case, there are 3 positive integers n, a, and b, describing the modulo, the starting number, and the multiplier. It is guaranteed for any kind of input, there will always be a cycle.

Format Output
For each test case, print a line containing "Case #X: Y" with X is the test case number starting from 1 and Y is the size of the cycle.

Constraints
1 <= T <= 100
1 <= n,a,b <= 100,000

Sample Input	Sample Output
2 3 2 2 5 2 2	Case #1: 2 Case #2: 4

Note
You can use one of these equations to calculate the answer

$$(a + b) \% k == ((a \% k) + (b \% k)) \% k$$
$$(a - b) \% k == ((a \% k) + k - (b \% k)) \% k$$
$$(a * b) \% k == ((a \% k) * (b \% k)) \% k$$