Break a cryptosystem

We denote φ the Euler's totient function.

The goal of the problem is to crack a message using a simplified RSA cryptosystem.

Here (n, e) denotes the public key, and c a crypted message.

Input

The first line of the input consist of a single integer number *t* which determines the number of tests.

In each of next *t* lines there is three integer numbers *n*, *e* and *c*.

Constraints

- 0 < t ≤ 10 000
- 0 < n ≤ 100 000 000, is the product of two distinct prime numbers (p, q)
- 0 < e ≤ 100 000 000, is coprime with $\varphi(n)$
- 0 ≤ c < n

Output

Print m such that

- the result of m^e modulo n is equal to c ;
- $0\leq m < n$.

That is the decrypted message. You have to break this cryptosystem !

Example

Input:
1
55 7 18
Output:
2