1009 ShuanQ

Time Limit: 2000/1000 MS (Java/Others)

Memory Limit: 65536/65536 K (Java/Others)

Problem Description

CX is a programmer of a mooc company. A few days ago, he took the blame for leakage of users' data. As a result, he has to develop an encryption algorithm, here is his genius idea.

First, the protocol specifies a prime modulus M, then the server generates a private key P, and sends the client a public key Q. Here $Q = P^{-1}, P \times Q \equiv 1 \mod M$.

Encryption formula: $encrypted\_data = raw\_data \times P \mod M$

Decryption formula: $raw\_data = encrypted\_data \times Q \mod M$

It do make sense, however, as a master of number theory, you are going to decrypt it.You have intercepted information about $P, Q, encrypted\_data$, and M keeps unknown. If you can decrypt it, output raw_data, else, say "shuanQ" to CX.

Input

First line has one integer $T(T \leq 20)$, indicating there are T test cases. In each case:

One line has three integers $P, Q, encrypted\_data$. ($1 < P, Q, encrypted\_data \leq 2 \times 10^6$)

It's guaranteed that $P, Q, encrypted\_data < M$.

Output

In each case, print an integer raw_data, or a string "shuanQ".

Sample Input

```
2
5 5 5
6 6 6
```

Sample Output

```
shuanQ
1
```