

Congruent primes

The goal of this problem is to print some prime numbers.

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 two integer numbers a and n .

Constraints

- $0 < t \leq 10\,000$
- $0 < a \leq 100\,000$
- $1 < n \leq 1\,000\,000$

Output

For all test cases, print all the prime numbers p such that $0 \leq p \leq 10^7$ and $p \equiv a \pmod n$.

If there are no such prime numbers, print "None" without quotes.

Example

Input:

```
3
1337 300000
42 12345
42 100001
```

Output:

```
1201337 3601337 7801337 9001337
None
100043 1700059 2500067 4700089 5900101 7100113 8500127 9700139
```