

## Problem C: Pseudoprime numbers

Fermat's theorem states that for any prime number  $p$  and for any integer  $a > 1$ ,  $a^p \equiv a \pmod{p}$ . That is, if we raise  $a$  to the  $p$ th power and divide by  $p$ , the remainder is  $a$ . Some (but not very many) non-prime values of  $p$ , known as *base- $a$  pseudoprimes*, have this property for some  $a$ . (And some, known as Carmichael Numbers, are base- $a$  pseudoprimes for all  $a$ .)

Given  $2 < p \leq 1,000,000,000$  and  $1 < a < p$ , determine whether or not  $p$  is a *base- $a$  pseudoprime*.

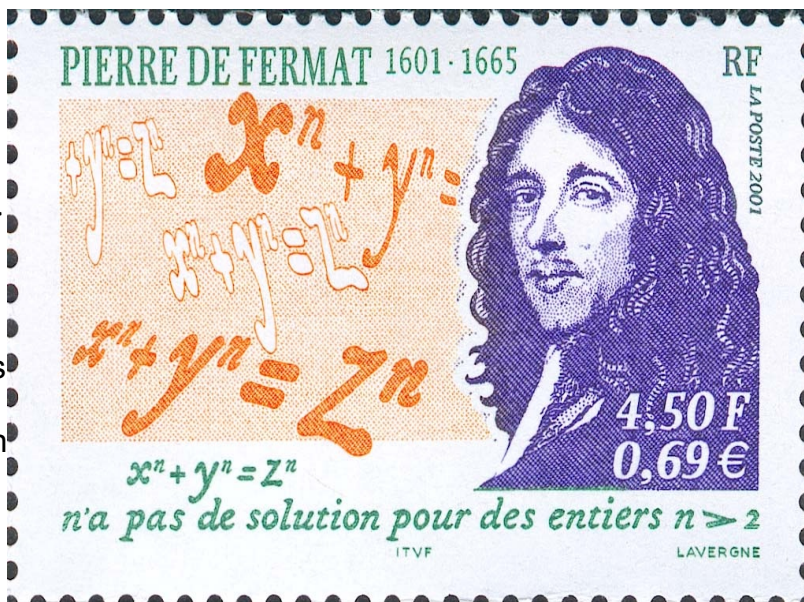
Input contains several test cases followed by a line containing "0 0". Each test case consists of a line containing  $p$  and  $a$ . For each test case, output "yes" if  $p$  is a base- $a$  pseudoprime; otherwise output "no".

### Sample Input

```
3 2
10 3
341 2
341 3
1105 2
1105 3
0 0
```

### Output for Sample Input

```
no
no
yes
no
yes
yes
yes
```



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