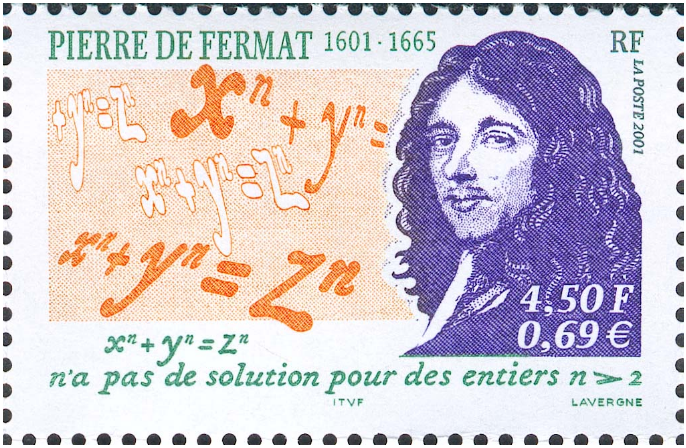
Fermat's theorem states that for any prime number p and for any integer $a > 1$, $a^p == a$ (mod p). That is, if we raise a to the pth power and divide by p, the remainder is a. Some (but not very many) non-prime values of p, known as *base-a pseudoprimes*, have this property for some a. (And some, known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

Input contains several test cases followed by a line containing '`0 0`'. Each test case consists of a line containing p and a.

Output

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
```

Sample Output

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