Problem K
Kore wa FFT desu ka?

Time limit: 1 second
Memory limit: 2048 megabytes

Problem Description

Kumagai is a competitive programmer whose favorite algorithm is the fast Fourier transform (FFT). Whenever he encounters a problem, he asks himself the question 「これは FFT ですか？」(which means "Is this FFT?").

Today Kumagai saw a problem that has n input integers and asks for the answer modulo a prime number p. He can solve this problem with FFT if and only if there exists a positive integer x that satisfies all of the following conditions:

- x is a power of 2, that is, $x = 2^y$ for some integer y.
- $x > n$.
- x divides $p - 1$.

Please help Kumagai determine whether he can solve the problem with FFT.

Input Format

The first line contains the number of test cases T. Each test case contains a line with two integers n and p.

Output Format

For each test case, print a line containing "`YES`" (without quotes) if Kumagai can solve the problem with FFT, and "`NO`" otherwise.

Technical Specification

- $1 \leq T \leq 1000$
- $1 \leq n \leq 10^9$
- $3 \leq p < 10^9$
- p is a prime number

Sample Input 1

```
4
2 7
7 41
8 41
1234567 998244353
```

Sample Output 1

```
NO
YES
NO
YES
```