Problem C: Perfect Powers

Filename: `perfect`
Timelimit: `1 second`

Arup loves integers that can be expressed as x^y where x and y are positive integers with $x > 1$ and $y > 1$. Specifically, we call $z = x^y$ a perfect power with base x, if both x and y are integers greater than 1. Note that the base of a perfect power need not be unique. For example $81 = 3^4 = 9^2$, thus 81 is a perfect power with base 3 and base 9. Help Arup determine whether or not an integer is a perfect power with a particular base.

Input

The first line will contain a single positive integer, ***c***, (***c*** ≤ 50), specifying the number of input cases.

Each input case will consist of two space separated integers, ***b*** (2 ≤ ***b*** ≤ 1000), and ***z*** (2 ≤ ***z*** ≤ 10^6), each on a line by itself.

Output

For each input case, output "YES" if ***z*** is a perfect power with base ***b*** with an exponent greater than 1 and "NO", otherwise on a line by itself.

Samples

Input	Output
4 2 8 100 1000 8 4096 5 5	YES NO YES NO