

A. Cifera

time limit per test: 2 seconds
 memory limit per test: 256 megabytes
 input: standard input
 output: standard output

When Petya went to school, he got interested in large numbers and what they were called in ancient times. For instance, he learned that the Russian word "tma" (which now means "too much to be counted") used to stand for a thousand and "tma tmyschaya" (which literally means "the tma of tmas") used to stand for a million.

Petya wanted to modernize the words we use for numbers and invented a word petricium that represents number k . Moreover, petricium la petricium stands for number k^2 , petricium la petricium la petricium stands for k^3 and so on. All numbers of this form are called petricumus cifera, and the number's importance is the number of articles la in its title.

Petya's invention brought on a challenge that needed to be solved quickly: does some number l belong to the set petricumus cifera? As Petya is a very busy schoolboy he needs to automate the process, he asked you to solve it.

Input

The first input line contains integer number k , the second line contains integer number l ($2 \leq k, l \leq 2^{31} - 1$).

Output

You should print in the first line of the output "YES", if the number belongs to the set petricumus cifera and otherwise print "NO". If the number belongs to the set, then print on the seconds line the only number — the importance of number l .

Examples

input
5 25
output
YES 1
input
3 8
output
NO

→ Attention

Package for this problem was not updated by the problem writer or Codeforces administration after we've upgraded the judging servers. To adjust the time limit constraint, solution execution time will be multiplied by 2. For example, if your solution works for 400 ms on judging servers, then value 800 ms will be displayed and used to determine the verdict.

Codeforces Beta Round #86 (Div. 2 Only)

Finished

→ Virtual participation

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Start virtual contest

→ Problem tags

math

No tag edit access

→ Contest materials

- Announcement 
- Tutorial 