Nearest Power of x

DiPS CodeJam 22

Prompt

Given an integer n, you must find the power of x that's nearest to n. If it's midway between the two nearest powers of x, round it up.

Input Format

- The first line of input contains a single integer x.
- The second line of input contains a single integer n.

Output Format

The first and only line of your output must contain a single integer, the power of x that's nearest to n.

Constraints

- $2 \leq x \leq 50$
- $1 \leq n \leq 1000$

Sample Input/Output

Input	Output
36 154	36

Solution

The two nearest powers of x to n are:

$$x^{\lfloor \log_n x \rfloor}$$

$$x^{\lceil \log_n x \rceil}$$

Sample Program

```
import math

x = int(input().strip())
n = int(input().strip())

y = x**(math.ceil(math.log(n, x)))
z = x**(math.floor(math.log(n, x)))
print(y if abs(n-y)<=abs(n-z) else z)
```