

D. Burning Midnight Oil

time limit per test: 2 seconds?
memory limit per test: 256 megabytes

One day a highly important task was commissioned to Vasya — writing a program in a night. The program consists of n lines of code. Vasya is already exhausted, so he works like that: first he writes v lines of code, drinks a cup of tea, then he writes as much as $\lfloor \frac{v}{k} \rfloor$ lines, drinks another cup of tea, then he writes $\lfloor \frac{v}{k^2} \rfloor$ lines and so on: $\lfloor \frac{v}{k^3} \rfloor$, $\lfloor \frac{v}{k^4} \rfloor$, $\lfloor \frac{v}{k^5} \rfloor$, ...

The expression $\lfloor \frac{a}{b} \rfloor$ is regarded as the integral part from dividing number a by number b .

The moment the current value $\lfloor \frac{v}{K^P} \rfloor$ equals 0, Vasya immediately falls asleep and he wakes up only in the morning, when the program should already be finished.

Vasya is wondering, what minimum allowable value v can take to let him write **not less** than n lines of code before he falls asleep.

Input

The input consists of two integers n and k , separated by spaces — the size of the program in lines and the productivity reduction coefficient, $1 \leq n \leq 10^9$, $2 \leq k \leq 10$.

Output

Print the only integer — the minimum value of v that lets Vasya write the program in one night.

Examples

input	Copy
7 2	
output	Copy
4	

input	Copy
59 9	
output	Copy
54	

Note

In the first sample the answer is $v=4$. Vasya writes the code in the following portions: first 4 lines, then 2, then 1, and then Vasya falls asleep. Thus, he manages to write $4+2+1=7$ lines in a night and complete the task.

In the second sample the answer is $v = 54$. Vasya writes the code in the following portions: 54, 6. The total sum is $54 + 6 = 60$, that's even more than $n = 59$.

→ **Attention**

The 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, a solution execution time will be multiplied by 2. For example, if your solution works for 400 ms on judging servers, then the value 800 ms will be displayed and used to determine the verdict.

ICPC Assiut University Training - Juniors Phase 1 Sheets-2022

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→ Group Contests

- Juniors Phase 1 Practice #5 (Bitmask, Bitset, Bits)
- Juniors Phase 1 Practice #4 (Binary search , Two pointers)
- Juniors Phase 1 Practice #3 (STL 2)
- Juniors Phase 1 Practice #2 (STL 1)
- Juniors Phase 1 Practice #1 (Prefix sum , Frequency Array)

Juniors Phase 1 Practice #4 (Binary search , Two pointers)

Finished

Practice



→ About Time Scaling

This contest uses time limits scaling policy (depending on a programming language). The system automatically adjusts time limits by the following multipliers for some languages. Despite scaling (adjustment), the time limit cannot be more than 30 seconds. Read the details by the [link](#).

→ **Virtual participation**

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

→ **Submit?**

Language: GNU G++20 13.2 (64 bit, win ▼