Roots X72228_en

Write a program that provided two integers n and b where $n \geq 1$ and $b \geq 0$, computes the greatest integer a such that $a^n = a \times \cdots \times a$ is less or equal than b. For instance for $n = 4$ and $b = 45$ number a is 2 because $2 \times 2 \times 2 \times 2$ is less or equal than 45 but $3 \times 3 \times 3 \times 3$ is greater than 45.
Exam score: 3.5 **Automatic part:** 40%

Input

The input is a sequence of pairs of integers n and b. Number n is greater than zero and integer b is nonnegative.

Output

For each pair n and b in the input sequence, a line with the greatest integer a such that $a^n \leq b$.

Sample input 1

```
4 45
2 15
1 16
2 100
```

Sample output 1

```
2
3
16
10
```

Sample input 2

```
5 100000
5 32
3 64
```

Sample output 2

```
10
2
4
```

Sample input 3

```
2 4
2 8
2 9
2 0
```

Sample output 3

```
2
2
3
0
```

Observation

Do not use any kind of math library. Function `pow` is forbidden. It is not asked for a very efficient program.

Problem information

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