Project Euler #193: Squarefree Numbers

A positive integer n is called squarefree, if no square of a prime divides n, thus $1, 2, 3, 5, 6, 7, 10, 11$ are squarefree, but not $4, 8, 9, 12$.

Similarly, let us define a positive integer n to be k^{th} powerfree if no k^{th} power of a prime divides n. For example, 40 is 4th powerfree, but not 48.

You are given two positive integers, N, and K. Find the number of Kth powerfree positive integers $\leq N$

Input Format

The only line of the input contains two integers, N, and K.

Constraints

$1 \leq N, K \leq 10^{18}$

Output Format

Print one line containing the number of Kth powerfree positive integers $\leq N$

Sample Input 0

```
10 2
```

Sample Output 0

```
7
```

Explanation 0

We have to find the number of 2nd-powerfree (squarefree) integers ≤ 10. These integers are $1, 2, 3, 5, 6, 7, 10$

Sample Input 1

```
10 3
```

Sample Output 1

```
9
```

Explanation 1

All positive integers ≤ 10 are 3rd-powerfree, except 8. (Since $8 = 2^3$ is divisible by 2^3)