Project Euler #204: Generalised Hamming Numbers

This problem is a programming version of Problem 204 from projecteuler.net

A Hamming number is a positive number which has no prime factor larger than 5.
So the first few Hamming numbers are 1, 2, 3, 4, 5, 6, 8, 9, 10, 12, 15.
There are 1105 Hamming numbers not exceeding 10^8.

We will call a positive number a generalised Hamming number of type n, if it has no prime factor larger than n.
Hence the Hamming numbers are the generalised Hamming numbers of type 5.

How many generalised Hamming numbers of type k are there which don't exceed n?

Input Format

The only line of each test file contains two integer numbers separated by a single space: n and k.

Constraints

- $2 \leq k \leq 100$
- $1 \leq n$
- $n \times k \leq 10^{19}$

Output Format

Print exactly one number: the number of generalised Hamming numbers of type k which don't exceed n.

Sample Input 0

```
15 5
```

Sample Output 0

```
11
```

Explanation 0

These eleven are "the first few Hamming numbers" from the problem statement.

Sample Input 1

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100000000 5
```

Sample Output 1

```
1105
```