

3600 Root of the Problem

Given positive integers B and N , find an integer A such that A^N is as close as possible to B . (The result A is an approximation to the N -th root of B .) Note that A^N may be less than, equal to, or greater than B .

Input

The input consists of one or more pairs of values for B and N . Each pair appears on a single line, delimited by a single space. A line specifying the value zero for both B and N marks the end of the input. The value of B will be in the range 1 to 1,000,000 (inclusive), and the value of N will be in the range 1 to 9 (inclusive).

Output

For each pair B and N in the input, output A as defined above on a line by itself.

Sample Input

```
4 3
5 3
27 3
750 5
1000 5
2000 5
3000 5
1000000 5
0 0
```

Sample Output

```
1
2
3
4
4
4
5
16
```