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PROBLEMS SUBMIT CODE MY SUBMISSIONS STATUS HACKS STANDINGS CUSTOM INVOCATION

# F. Small Operations

time limit per test: 3 seconds memory limit per test: 256 megabytes

Given an integer x and an integer k. In one operation, you can perform one of two actions:

- choose an integer  $1 \leq a \leq k$  and assign  $x = x \cdot a$ ;
- choose an integer  $1 \leq a \leq k$  and assign  $x = \frac{x}{a}$  , where the value of  $\frac{x}{a}$  must be an integer.

Find the minimum number of operations required to make the number x equal to y, or determine that it is impossible.

#### Input

The first line of the input contains one integer t ( $1 \le t \le 10^4$ ) — the number of test cases.

The only line of each test case contains three integers x, y and k ( $1 \le x, y, k \le 10^6$ ).

It is guaranteed that the sum of x and the sum of y across all test cases does not exceed  $10^8$ .

### Output

For each test case, output -1 if it is impossible to achieve x=y using the given operations, and the minimum number of required operations otherwise.

### Example

input	Сору
8	
4 6 3	
4 5 3	
4 6 2	
10 45 3	
780 23 42	
11 270 23	
1 982800 13	
1 6 2	
output	Сору
2	
-1	
-1	
3	
3	
3	
6	

### Codeforces Round 1027 (Div. 3)

## **Finished**

Practice



## → 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

# → Clone Contest to Mashup

You can clone this contest to a mashup.

Clone Contest

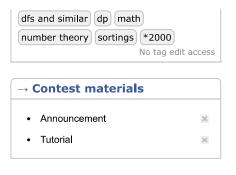


### → Last submissions

Submission	Time	Verdict
322406136	Jun/01/2025 17:11	Accepted
322405733	Jun/01/2025 17:08	Time limit exceeded on test 6
321529650	May/26/2025 19:46	Time limit exceeded on test 6
321527479	May/26/2025 19:43	Time limit exceeded on test 3
321525353	May/26/2025 19:40	Time limit exceeded on test 3
321514442	May/26/2025 19:23	Time limit exceeded on test 6
321512367	May/26/2025 19:20	Time limit exceeded on test 6
321501342	May/26/2025 19:04	Time limit exceeded on test 3



binary search brute force



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