$02 : 22 : 21 : 53$

DAY   HRS   MIN   SEC

Codathon - Inter NIT Coding Contest

LIVE

Jan 15, 2017, 06:00 PM IST - Jan 22, 2017, 06:00 PM IST

INSTRUCTIONS   PROBLEMS   SUBMISSIONS   LEADERBOARD   ANALYTICS   JUDGE

← Problems / Day 5 - Fascinating functions

Day 5 - Fascinating functions
Max. Marks: 100

Disclaimer: All characters appearing in this question are fictitious. Any resemblance to real person, living or dead, are purely coincidental.

Rahul Gandhi is vexed on the launch of BHIM app. Out of rage to prove himself , he designs some functions, and presents them before the party –

The two functions are $X(k)$ and $Y(k)$.

- $X(k)$ is defined as the number of positive divisors of k
- $Y(k) = k^{X(k)}$

Now, find out the smallest m such that $Y(m) = N$ for some given integer N.

Input Format:

The first line consists of T integers .
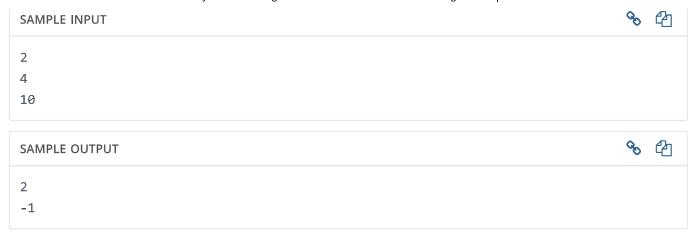Each test case consists of a positive integer N.

Output Format:

For each test case, output the desired result.

Input Constraints:

$1 \leq T \leq 10^5$
$2 \leq N \leq 10^{18}$

Note
If no such m exists, then output **"-1"** (without quotes).

SAMPLE INPUT

```
2
4
10
```

SAMPLE OUTPUT

```
2
-1
```

Explanation

- In the first sample we have, $X(2) = 2$ and $Y(2) = 4$. So, the answer is 2
- In the second sample, there is no k satisfying $Y(k) = 10$

Time Limit:	1.0 sec(s) for each input file.
Memory Limit:	256 MB
Source Limit:	1024 KB
Marking Scheme:	Marks are awarded if any testcase passes.
Allowed Languages:	C, C++, Clojure, C#, D, Erlang, F#, Go, Groovy, Haskell, Java, Java 8, JavaScript(Rhino), JavaScript(Node.js), Lisp, Lisp (SBCL), Lua, Objective-C, OCaml, Octave, Pascal, Perl, PHP, Python, Python 3, R(RScript), Racket, Ruby, Rust, Scala, Scala 2.11.8, Swift, Visual Basic

CODE EDITOR

Enter your code or Upload your code as file.　　　　Save　　C (gcc 4.8.4)

```c
1  #include <stdio.h>
2
3  int main()
4  {
5      printf("Hello World!\n");
6      return 0;
7  }
8
```

LIVE EVENTS

1:1

🔽 Provide custom input

COMPILE & TEST   SUBMIT

💡 *Press Ctrl-space for autocomplete suggestions.*   POWERED BY code table

🪄 **Tip:** You can submit any number of times you want. Your best submission is considered for computing total score.

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Ground Floor, Salarpuria Business Center,

4th B Cross Road, 5th A Block,

Koramangala Industrial Layout,

Bangalore, Karnataka 560095, India.

✉ contact@hackerearth.com

📞 +91-80-4155-4695

📞 +1-650-461-4192

LIVE EVENTS

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