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D1. Removal of a Sequence (Easy Version)

time limit per test: 2 seconds

memory limit per test: 512 megabytes

This is the easy version of the problem. The difference between the versions is the constraint on x; in this version, $x \le 10^5$.

Polycarp has a sequence of all natural numbers from 1 to 10^{12}. He decides to modify this sequence by performing the following action x times:

- Simultaneously remove all numbers at positions y, $2 \cdot y$, $3 \cdot y$, ..., $m \cdot y \le n$, where n is the length of the current sequence.

After that, Polycarp wants to find the k-th number in the remaining sequence or determine that the length of the resulting sequence is less than k.

Help Polycarp solve this problem!

Consider an example. Let $x = 2$, $y = 3$, $k = 5$, then:

$$1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6 \quad 7 \quad 8 \quad 9 \quad 10 \quad 11 \quad 12 \quad \ldots$$

$$1 \quad 2 \quad \cancel{3} \quad 4 \quad 5 \quad \cancel{6} \quad 7 \quad 8 \quad \cancel{9} \quad 10 \quad 11 \quad \cancel{12} \quad \ldots$$

$$1 \quad 2 \quad \cancel{3} \quad \cancel{4} \quad 5 \quad \cancel{6} \quad 7 \quad \cancel{8} \quad \cancel{9} \quad 10 \quad 11 \quad \cancel{12} \quad \ldots$$

The numbers crossed out with a red line were removed after the first operation, and the numbers crossed out with a blue line were removed after the second operation. Thus, the number at position $k = 5$ is the number 10.

有道 翻译

这是这个问题的简单版本。两个版本之间的区别在于 x 上的约束；在本版本中， $x \leq 10^5$.**

Polycarp具有从 1 到 10^{12} 的所有自然数序列。他决定通过执行以下操作 x 来修改这个序列：

-同时删除位置 y ， $2 \cdot y$ ， $3 \cdot y$ ， …， $m \cdot y \leq n$ ，其中 n 是当前序列的长度。

之后，Polycarp想要在剩下的序列中找到 k \的第一个数字，或者确定结果序列的长度小于 k 。

帮助Polycarp解决这个问题！

考虑一个例子。设 $x = 2$ ， $y = 3$ ， $k = 5$ ，则：

! [] (https://espresso.codeforces.com/d72e39099c3d7824b722e3747c0a15a60a44a6c9.png)

用红线划掉的数字在第一次操作后被删除，用蓝线划掉的数字在第二次操作后被删除。因此，位置 $k = 5$ 的数字是 10 。

Input

Each test contains multiple test cases. The first line contains the number of test cases t ($1 \leq t \leq 10$). The description of the test cases follows.

The only line of each test case contains three integers x, y, k ($1 \leq x \leq \mathbf{10^5}$, $1 \leq y, k \leq 10^{12}$).

有道 翻译

输入** **

每个测试包含多个测试用例。第一行包含测试用例的数量 t （ $1 \leq t \leq 10$ ）。下面是测试用例的描述。

每个测试用例的唯一一行包含三个整数 x，y，k（$1 \le x \le 10^5$，$1 \le y, k \le 10^{12}$）。

Output

For each test case, output a positive integer that is at the k-th position in the resulting sequence, or -1 if the length of the resulting sequence is less than k.

Example

input	Copy

```
6
2 3 5
2 5 1
20 2 1000000000000
175 10 28
100000 998244353 1999999999
1 1 1
```

output	Copy

```
10
1
-1
2339030304
2000199999
-1
```

GNU G++20 13.2 (64 bit, winlibs)

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