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The Proposal

Problem Code: NPLQ18C

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Pratyush made "The Proposal" to the girl he likes. But the girl is still not sure of Pratyush's programming capabilities. So she asks him to solve a simple programming question.

First she gives him a range [l, r].

Then she gives him Q queries. Each query consists of an integer n. She asks him to print the first integer a which satisfies three conditions:

- $(a-1)! \mod a = (a-1)$ where [(a-1)! = 1 * 2 * 3...... * (a-1)]
- a > n
- $l \leq a \leq r$.

If no such a exists in the range she asks him to print -1.

As Pratyush doesn't want to hear a NO, he asks for your help.

Input:

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Successful Submissions

First line contains T, the number of test cases. Each test case contains the following lines. The first line contains three integers l,r,Q. It is followed by Q lines. Each line contains an integer n.

Output:

For each query print the integer a. Print -1 if no such a exists.

Constraints:

- $1 \le T \le 10$
- $1 \le Q \le 10^5$
- $3 \le l \le r \le 10^9$
- $0 \le r l \le 10^5$
- $1 \le n \le 10^9$

Sample Input:

```
1
3 10 3
6
7
8
```

Sample Output:

```
7
7
-1
```

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Date Added: 13-09-2018

Time Limit: 2 secs