
Problem A. K-hour Clock

Input file: **standard input**
Output file: **standard output**
Time limit: 1 second
Memory limit: 256 megabytes

A “ k -hour clock” is a day keeping method which follows the rules below:

- A day is divided into k hours, where the i -th hour is called the $(i - 1)$ o’ clock;
- If it’s x o’clock now, it will be $(x + 1)$ o’clock after 1 hour if $0 \leq x < k - 1$;
- If it’s $(k - 1)$ o’clock now, it will be 0 o’clock after 1 hour.

We know that it’s x o’clock now, and after y hours it will be z o’clock. What’s the value of k ?

Input

There are multiple test cases. The first line of the input is an integer T (about 10^5), indicating the number of test cases. For each test case:

The first and only line contains three integers x , y and z ($0 \leq x, z \leq 10^9$, $1 \leq y \leq 10^9$).

Output

For each test case output one line containing one integer, indicating the value of k . Note that there must be $1 \leq k \leq 2 \times 10^9$. If there are multiple valid answers, you can print any of them; If there is no valid answer, print “-1” (without quotes) instead.

Example

standard input	standard output
4	12
11 18 5	24
3 49 4	3
1 9 1	-1
1 3 10	