Problem C. Clone Ranran

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	512 megabytes

Ranran needs to prepare a contest! A contest is made of c problems, and Ranran can do one of the following two things:

- Clone himself in a minutes. That is, after a minutes, there will be one more Ranran.
- Prepare a problem in b minutes. That is, after b minutes, there will be one more problem.

Note that a cloned Ranran can also do the two things above. A Ranran cannot do the two things at the same time.

Ranran wants to prepare the contest as fast as possible. But he is very lazy, so he asks you to find the minimum number of minutes to prepare the contest.

You need to answer T queries independently.

Input

The first line contains an integer T ($1 \le T \le 10^5$).

Each of the next T lines contains three integers a, b and c ($1 \le a, b, c \le 10^9$), representing a query.

Output

For each test case, output a line with a single integer representing the answer.

Example

standard input	standard output
5 1 1 1 2 3 3 9 9 9 3 26 47 1064 822 1048576	1 7 45 44 21860