Problem B – Buggy visit counter.

Author: Moroni Silverio

Guinea pigs videos have become very popular on internet these days. The favourite internet site for people who love guinea pigs has a lot of videos of this funny animals to amuse them.
The director of this site have told the programmers to add a visit counter for each video, he wants, in the near future, to get more revenue from videos adding advertisements before they play, something that to this day nobody has done before. After some time, the visit counter has become a success and helped identify and capitalize a lot of money from the most popular videos in the site, however, someone noticed a visit counter with a negative number, meaning that, the visits counter is not as exact as everyone believes.
After hours of debugging, programmers found that the visits counter in the videos has a serious flaw, when the counter reaches some hardcoded value L, the next value it generates is a negative number; the first time the counter passes this limit the negative value is -1, and then it behaves normally, going from -1 to 0, from 0 to 1, and so on, until it reaches L again; the next number the counter generates is -2 and then it behaves normally, after passing L again it will generate -3, then -4 and so on.
The solution the programmers have proposed is to increase the value of L by one, but, soon the counter reached the new value of L and got to a negative number again, this time they decided to increase the curren value of L by 2 units, and they have kept doing this in such way that after the n-th time the counter has passed the stablished limit, they increase the limit value by n units. With all the changes to the value of L, nobody knows the number of visits a video has, they only know the initial value of L, and that the video counter is bugged.
Jaime has obtained the real number of visits C for a video and, in order to help the team, he is working on a program that given the values L and C, determines what is the visit count v the bugged counter should have produced for that video. For example, if $L = 3$ we can see the bugged visit counter will produce the values $1, 2, 3, -1, 0, 1, 2, 3, 4, -2, -1, 0, 1, ...$, if the value $C = 4$ then the bugged visit counter should show the value -1, if $C = 10$, the buggy counter shows -2.

Help the programmers know what is the value the bugger visit counter should show knowing the initial value for L and the number of visists C Jaime found for the video.

Input

The first line of the input contains a single integer T ($1 \leq T \leq 10^4$), representing the number of test cases. Each of the following T lines contain two integer numbers separated by a space L and C ($1 \leq L \leq 10^5$, $1 \leq C \leq 10^{15}$), the limit L the buggy counter initially had and the number of visits C the video has based on Jaime's log files.

Output

For each test case in the input, output a line with the value v, the number the buggy visit counter should show for a video with C visits.

Sample input 1	**Sample output 1**
2 3 10 3 4	-2 -1