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Save the Prisoner!

 by [sd5869](#)

Problem

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A jail has N prisoners, and each prisoner has a unique id number, S , ranging from 1 to N . There are M sweets that must be distributed to the prisoners.

The jailer decides the fairest way to do this is by sitting the prisoners down in a circle (ordered by ascending S), and then, starting with some random S , distribute one candy at a time to each sequentially numbered prisoner until all M candies are distributed. For example, if the jailer picks prisoner $S = 2$, then his distribution order would be $(2, 3, 4, 5, \dots, n-1, n, 1, 2, 3, 4, \dots)$ until all M sweets are distributed.

But wait—there's a catch—the very last sweet is poisoned! Can you find and print the ID number of the last prisoner to receive a sweet so he can be warned?

Input Format

The first line contains an integer, T , denoting the number of test cases.

The T subsequent lines each contain 3 space-separated integers:

N (the number of prisoners), M (the number of sweets), and S (the prisoner ID), respectively.



Constraints

- $1 \leq T \leq 100$
- $1 \leq N \leq 10^9$
- $1 \leq M \leq 10^9$
- $1 \leq S \leq 10^9$

Output Format

For each test case, print the ID number of the prisoner who receives the poisoned sweet on a new line.

Sample Input

```
1
5 2 1
```

Sample Output

```
2
```

Explanation

There are $N = 5$ prisoners and $M = 2$ sweets. Distribution starts at ID number $S = 1$, so prisoner 1 gets the first sweet and prisoner 2 gets the second (last) sweet. Thus, we must warn prisoner 2 about the poison, so we print 2 on a new line.

[f](#) [t](#) [in](#)



Submissions: 20462

Max Score: 15

Difficulty: Easy

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C#



```
1 using System;
2 using System.Collections.Generic;
3 using System.IO;
4 class Solution {
5     static void Main(String[] args) {
6         /* Enter your code here. Read input from STDIN. Print output to STDOUT. Your class should be named Solution
7         */
8         int t = int.Parse(Console.ReadLine());
9
10        while (t-- > 0)
11        {
12            string[] input = Console.ReadLine().Split(' ');
13            int n = int.Parse(input[0]); //prisioneros
14            int m = int.Parse(input[1]); //dulces
15            int s = int.Parse(input[2]); //id
16
17            //string[] input = "999999999 999999999 1".Split(' ');
18            //long n = int.Parse(input[0]); //prisioneros
19            //long m = int.Parse(input[1]); //dulces
20            //long s = int.Parse(input[2]); //id
21
22            long resto = m % n;
23            resto += (s - 1);
24            if (resto > n)
25            {
26                resto -= n;
27            }
28            if (resto == 0)
29            {
30                resto = n;
31            }
32            Console.WriteLine(resto);
33        }
34    }
35 }
36 }
```

Line: 21 Col: 1

 [Upload Code as File](#)☐ Test against custom input[Run Code](#)[Submit Code](#)

Congrats, you solved this challenge!

✓ Test Case #0

✓ Test Case #3

✓ Test Case #1

✓ Test Case #4

✓ Test Case #2

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