

A very hard problem to crack

Mujahid and Hasan went Mirpur National Stadium to enjoy Bangladesh vs India cricket game .

There are N seats in Total . But the seats are arranged in a circular way .

In the mean time Mujahid lost Hasan . But Mujahid has been able to Locate Hasan over Mobile Phone .

Now Mujahid wants to know minimum distance between them . Can you help him ???

Mujahid's Location is A , Hasan's Location is B.

Input

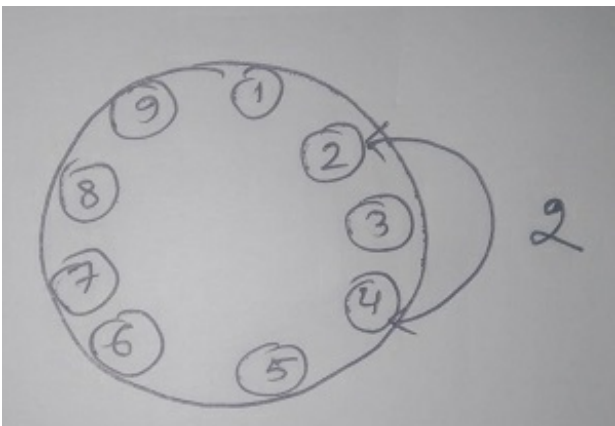
The first line contains positive integer t ($1 \leq t \leq 1000$) — the number of test cases. Next t lines contain the descriptions of test cases.

Each line contains three positive integer N , A , B . ($1 \leq N \leq 10^{14}$) .

Output

For each testcase print a number which will be the mininum distance between Mujahid and Hasan's position.

For more understanding see the picture below, which is for the testcase where, $N = 9$, $A = 2$, $B = 4$.



Example

Input:

4

9 1 3
8 4 5
5 1 2
8 2 4

Output:

2
1
1
2