B. Build the Permutation

time limit per test: 1 second
memory limit per test: 256 megabytes
input: standard input
output: standard output

You are given three integers n, a, b. Determine if there exists a permutation $p_1, p_2, \ldots, p_n$ of integers from 1 to n, such that:

- There are exactly a integers i with $2 \le i \le n-1$ such that $p_{i-1} < p_i > p_{i+1}$ (in other words, there are exactly a local maximums).
- There are exactly b integers i with $2 \le i \le n-1$ such that $p_{i-1} > p_i < p_{i+1}$ (in other words, there are exactly b local minimums).

If such permutations exist, find any such permutation.

Input

The first line of the input contains a single integer t ($1 \le t \le 10^4$) — the number of test cases. The description of test cases follows.

The only line of each test case contains three integers n, a and b ($2 \le n \le 10^5$, $0 \le a, b \le n$).

The sum of n over all test cases doesn't exceed 10^5.

Output

For each test case, if there is no permutation with the requested properties, output -1.

Otherwise, print the permutation that you are found. If there are several such permutations, you may print any of them.

Example

input
3 4 1 1 6 1 2 6 4 0
output
1 3 2 4 4 2 3 1 5 6 -1

Note

In the first test case, one example of such permutations is $[1, 3, 2, 4]$. In it $p_1 < p_2 > p_3$, and 2 is the only such index, and $p_2 > p_3 < p_4$, and 3 the only such index.

One can show that there is no such permutation for the third test case.

Codeforces Round #758 (Div.1 + Div. 2)
Finished

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→ Virtual participation
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→ Problem tags
constructive algorithms greedy *1200
No tag edit access

→ Contest materials
- Announcement (en)
- Tutorial (en)