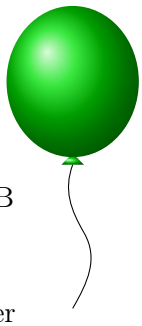
I Antennas



Time limit: 4.0s
Memory limit: 2048MB

There are n equidistant antennas on a line, numbered from 1 to n. Each antenna has a power rating, the power of the i-th antenna is p_i.

The i-th and the j-th antenna can communicate directly if and only if their distance is at most the minimum of their powers, i.e., $|i - j| \leq \min(p_i, p_j)$. Sending a message directly between two such antennas takes 1 second.

What is the minimum amount of time necessary to send a message from antenna a to antenna b, possibly using other antennas as relays?

Input

Each test contains multiple test cases. The first line contains an integer t ($1 \leq t \leq 100\,000$) — the number of test cases. The descriptions of the t test cases follow.

The first line of each test case contains three integers n, a, b ($1 \leq a, b \leq n \leq 200\,000$) — the number of antennas, and the origin and target antenna.

The second line contains n integers $p_1, p_2, \ldots, p_n$ ($1 \leq p_i \leq n$) — the powers of the antennas.

The sum of the values of n over all test cases does not exceed 200 000.

Output

For each test case, print the number of seconds needed to trasmit a message from a to b. It can be shown that under the problem constraints, it is always possible to send such a message.

Samples

Sample input 1	Sample output 1
3 10 2 9 4 1 1 1 5 1 1 1 1 5 1 1 1 1 3 1 3 3 3 1	4 0 2

Explanation of sample 1.
In the **first test case**, we must send a message from antenna 2 to antenna 9. A sequence of communications requiring 4 seconds, which is the minimum possible amount of time, is the following:

- In 1 second we send the message from antenna 2 to antenna 1. This is possible since $|2 - 1| \leq \min(1, 4) = \min(p_2, p_1)$.

- In 1 second we send the message from antenna 1 to antenna 5. This is possible since $|1-5| \leq \min(4,5) = \min(p_1, p_5)$.
- In 1 second we send the message from antenna 5 to antenna 10. This is possible since $|5-10| \leq \min(5,5) = \min(p_5, p_{10})$.
- In 1 second we send the message from antenna 10 to antenna 9. This is possible since $|10-9| \leq \min(5,1) = \min(p_{10}, p_9)$.