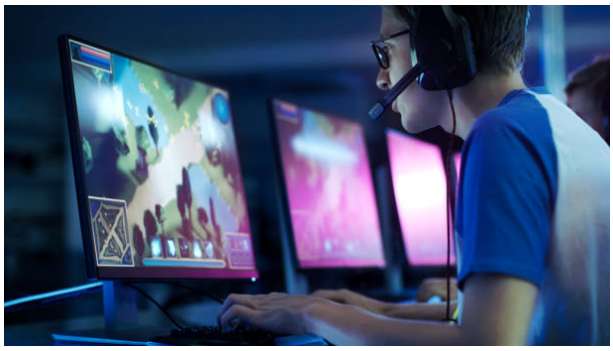
B Billion Players Game



You are following the world championship of the Billion Players Game. There are 10^9 players competing, and you want to predict the final ranking p of Godflex, your favorite streamer. After analyzing recent matches, you are sure that $l \le p \le r$, but you don't know anything else.

There are n offers made by the in-game bookmaker. In the i-th offer, the bookmaker suggests an estimation a_i for Godflex's final ranking. For each offer, you must choose exactly one of the following actions:

- Ignore the offer.
- Accept the offer by claiming that $p \le a_i$. If you are right, you earn $|p - a_i|$ coins; otherwise you lose $|p - a_i|$ coins.
- Accept the offer by claiming that $p \ge a_i$. If you are right, you earn $|p - a_i|$ coins; otherwise you lose $|p - a_i|$ coins.

After you decide how to deal with all the offers, the actual Billion Players Game is played. Godflex gets an integer position p in $[l, r]$, and then all the offers are settled up.

Your total score is the number of coins you are guaranteed to earn, that is, the minimum number of coins you earn over all possible values of p in $[l, r]$. Find the maximum possible score you can guarantee.

Input

Each test contains multiple test cases. The first line contains the number of test cases t ($1 \le t \le 10^4$). The description of the test cases follows.

The first line of each test case contains three integers n, l, r ($1 \le n \le 2 \cdot 10^5$, $1 \le l \le r \le 10^9$) — the number of offers and the possible range of Godflex's final ranking.

The second line of each test case contains n integers $a_1, a_2, \ldots, a_n$ ($1 \le a_i \le 10^9$) — the bookmaker's estimations of Godflex's ranking in each offer.

It is guaranteed that the sum of n over all test cases does not exceed $2 \cdot 10^5$.

Output

For each test case, output a single line containing an integer: the maximum possible score you can guarantee.

Samples

Sample input 1	Sample output 1
4 1 1 5 3 2 100 100 50 200 5 1 10 5 7 3 9 1 5 6 10 9 3 1 7 5	0 150 12 13

Explanation of sample 1.
In the first test case, there is only one offer.

- If you ignore the offer, your score is 0;
- if you accept the offer claiming that $p \leq 3$, your score is -2 (reached when $p = 5$, which makes you lose $|5 - 3| = 2$ coins);
- if you accept the offer claiming that $p \geq 3$, your score is -2 (reached when $p = 1$, which makes you lose $|1 - 3| = 2$ coins).

So the maximum possible score is 0.

In the second test case, it is optimal to accept the offers claiming that $p \geq 50$ and $p \leq 200$. Since p must be 100, you gain $|100 - 50| + |100 - 200| = 150$ coins.

Image credits: Team of Professional eSport Gamers Playing in Competitive MMORPG/ Strategy Video Game on a Cyber Games Tournament, lyncconf.com, CC BY 2.0