Problem M
Monopoly

Monopoly is perhaps one of the most popular tabletop games of all time. Recently, thanks to many content creators rediscovering and playing the game, it has once again become a common bonding activity among young couples.

After a long day at work, our lovely couple *Haros* and *Iwys* cannot wait to blow off steam with some *Monopoly* action! However, as they both have to attend a meeting tomorrow morning, a **long and intimate** *Monopoly* battle is sadly not an option. Therefore, Haros and Iwys decide to go for a **quick and intense** *Monopoly Turbo* game instead.

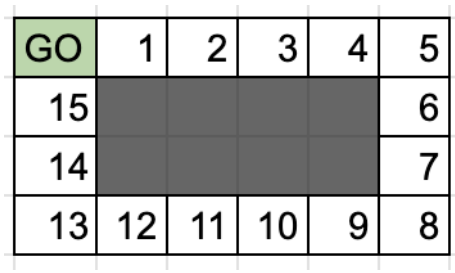

Figure M.1: A Monopoly Turbo board with $n = 15$

In *Monopoly Turbo*, there is no dice or chance involved. Instead, the game board consists of a *GO* space and n property spaces placed along the perimeter of the board. The properties are numbered from 1 to n clockwise. The i-th property costs a_i dollars to purchase. Haros and Iwys initially have x and y dollars, respectively. They take turns playing the game, with Haros making the first move. In a player's turn, they will start from *GO* and choose to travel either in clockwise or counter-clockwise direction, until they land on **the first** unclaimed property. They then have to purchase the property and claim it for themselves. The game ends when a player cannot make a purchase, either by not having enough fund left or having no property left to buy. The player who cannot make the move loses the game.

As experienced *Monopoly* players, Haros and Iwys immediately find the optimal way to play the game, and it has gotten a bit boring, so they decided to write a program that automatically plays for them and output the winner. Let's help them finish it before the meeting!

Input

The first line of the input contains a single integer t — the number of test cases ($1 \le t \le 200$). t test cases follow, each is presented two lines:

- The first line contains three integers n, x and y ($1 \le n \le 200$, $1 \le x, y \le 10^9$) — the number of property spaces and the amount of money Haros and Iwys initially have, respectively.
- The second line contains n integers a_1, a_2, …, a_n ($1 \le a_i \le 10^9$) – the price of these properties.

Output

For each test case, print on a single line the name of the winner, either `Haros` or `Iwys`.

Sample Explanation

In the first test case, Haros can win by traveling in the clockwise direction and buying the property number 1, which costs \$7. Then, Iwys must choose either property 2 or 4, which both cost \$5. Haros can then purchase property 3, leaving Iwys with the other \$5 property which she cannot afford (as she only has \$4 left after her first turn).

In the second test case, as both players can afford every property, the game ends in Haros' fourth turn when there is no property left, thus making Iwys the winner.

In the third test case, Iwys can win by always choosing the cheaper available property on her turns.

Sample Input 1	Sample Output 1
3 4 9 9 7 5 1 5 6 10 10 1 1 1 1 1 1 7 405 6 103 1 102 2 101 3 100	Haros Iwys Iwys