Problem E. Magic Trick

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	1024 megabytes

The magician Link has a deck s consisting of n cards, each with an integer on it representing its value.

Link can pick two cards from the deck. Let the values of the cards be x and y. If $|x - y| = 1$, he can perform one of the following two tricks:

- Change the two card values to $x - 1$ and $y - 1$, then put them back into the deck;
- Change the two card values to $x + 1$ and $y + 1$, then put them back into the deck.

You also have a deck t containing n cards. You want to know whether Link can make his deck identical to yours after performing the magic trick any number of times (possibly 0). Please note that there can be cards with the same value in the deck, and there is no difference between those cards.

Input

Each test file 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 an integer n ($1 \le n \le 10^5$), denoting the number of cards in the deck.

The second line contains n integers $s_1, s_2, \cdots, s_n$ ($1 \le s_i \le 10^9$), representing the values of Link's cards.

The third line contains n integers $t_1, t_2, \cdots, t_n$ ($1 \le t_i \le 10^9$), representing the values of your cards.

For each test file, it is guaranteed that the sum of n over all test cases does not exceed 10^5.

Output

For each test case, output "`Yes`" if Link can make his deck identical to yours after performing the magic trick any number of times (possibly 0); otherwise, output "`No`".

Example

standard input	standard output
3 3 1 10 100 100 10 1 2 1 2 99 100 3 1 2 3 1 1 6	Yes Yes No

Note

In the first sample test case, the two decks are already identical, so the output is "`Yes`".

In the second sample test case, by performing the second magic trick 98 times consecutively on two cards, Link can obtain the target deck, so the output is "`Yes`".

In the third sample test case, it is impossible to transform Link's deck into the target deck, so the output is "`No`".