

# Problem A

## Two arrays

Time limit: 1 second  
Memory limit: 256 megabytes

You are given two integer arrays  $a$  and  $b$ , each containing  $n$  elements:  $a_1, a_2, \dots, a_n$  and  $b_1, b_2, \dots, b_n$ . You are allowed to perform the following operation any number of times:

- Choose an index  $i$  ( $1 \leq i \leq n$ ), and **increase both**  $a_i$  and  $b_i$  by one.

Given two integers  $C$  and  $D$ , determine the **minimum number of operations** required to make the two arrays satisfy:

$$\max(a) - \min(a) \leq C \quad \text{and} \quad \max(b) - \min(b) \leq D.$$

Here,  $\max(a)$  and  $\min(a)$  denote the maximum and minimum elements of array  $a$ , respectively; similarly for  $\max(b)$  and  $\min(b)$ .

## Input

The first line contains an integer  $T$ , which is the number of test cases. For each test case:

- The first line contains three integers  $n, C, D$  ( $1 \leq n \leq 10^5$ ,  $0 < C, D \leq 10^9$ ).
- The second line contains  $n$  integers  $a_1, a_2, \dots, a_n$  ( $-10^9 \leq a_i \leq 10^9$ ).
- The third line contains  $n$  integers  $b_1, b_2, \dots, b_n$  ( $-10^9 \leq b_i \leq 10^9$ ).

The sum of  $n$  over all test cases is at most  $10^5$ .

## Output

For each test case, print a single integer on a single line - the minimum number of operations required to make both arrays satisfy the given constraints. In case we cannot find a way to satisfy the condition, print  $-1$ .

Sample Input	Sample Output
2	1
4 2 3	-1
-1 -2 -3 -4	
-1 -2 -3 -4	
5 2 1	
-1 0 1 2 3	
2 2 2 2 2	