



# Permuting Two Arrays

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Consider two  $n$ -element arrays of integers,  $A = [a_0, a_1, \dots, a_{n-1}]$  and  $B = [b_0, b_1, \dots, b_{n-1}]$ . You want to permute them into some  $A'$  and  $B'$  such that the relation  $a'_i + b'_i \geq k$  holds for all  $i$  where  $0 \leq i < n$ . For example, if  $A = [0, 1]$ ,  $B = [0, 2]$ , and  $k = 1$ , a valid  $A'$ ,  $B'$  satisfying our relation would be  $A' = [1, 0]$  and  $B' = [0, 2]$ .

You are given  $q$  queries consisting of  $A$ ,  $B$ , and  $k$ . For each query, print YES on a new line if some permutations  $A'$ ,  $B'$  exist satisfying the relation above. If no valid permutations exist, print NO instead.

## Input Format

The first line contains an integer,  $q$ , denoting the number of queries. The  $3q$  subsequent lines describe each of the  $q$  queries in the following format:

1. The first line contains two space-separated integers describing the respective values of  $n$  (the size of arrays  $A$  and  $B$ ) and  $k$  (the relation variable).
2. The second line contains  $n$  space-separated integers describing the respective elements of array  $A$ .
3. The third line contains  $n$  space-separated integers describing the respective elements of array  $B$ .

## Constraints

- $1 \leq q \leq 10$
- $1 \leq n \leq 1000$
- $1 \leq k \leq 10^9$
- $0 \leq a_i, b_i \leq 10^9$

## Output Format

For each query, print YES on a new line if valid permutations exist; otherwise, print NO.

## Sample Input

```
2
3 10
2 1 3
7 8 9
4 5
1 2 2 1
3 3 3 4
```

## Sample Output

```
YES
NO
```

## Explanation

We perform the following two queries:

1.  $A = [2, 1, 3]$ ,  $B = [7, 8, 9]$ , and  $k = 10$ . We permute these into  $A' = [1, 2, 3]$  and  $B' = [9, 8, 7]$  so that the following statements are true:

- $a_0 + b_0 = 1 + 9 = 10 \geq k$
- $a_1 + b_1 = 2 + 8 = 10 \geq k$
- $a_2 + b_2 = 3 + 7 = 10 \geq k$

Thus, we print YES on a new line.

2.  $A = [1, 2, 2, 1]$ ,  $B = [3, 3, 3, 4]$ , and  $k = 5$ . To permute  $A$  and  $B$  into a valid  $A'$  and  $B'$ , we would need at least three numbers in  $A$  to be greater than 1; as this is not the case, we print NO on a new line.

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Difficulty: Easy

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Java 7



```
1 import java.io.*;
2 import java.util.*;
3 import java.text.*;
4 import java.math.*;
5 import java.util.regex.*;
6
7 public class Solution {
8
9     public static void main(String[] args) {
10         /* Enter your code here. Read input from STDIN. Print output to STDOUT. Your class should be named Solution. */
11     }
12 }
```

Line: 1 Col: 1

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