

Apparently Make UTPC

Input file: **standard input**
Output file: **standard output**
Time limit: **2 seconds**
Memory limit: **1024 megabytes**

You are given sequences of positive integers $A = (A_1, A_2, \dots, A_X)$, $B = (B_1, B_2, \dots, B_Y)$, and $C = (C_1, C_2, \dots, C_Z)$ of lengths X , Y , and Z , respectively. Here, $X \leq Y \leq Z$ holds.

You want to rearrange the elements of C such that the resulting sequence contains both A and B as contiguous subsequences.

Determine whether it is possible to achieve this goal. If it is possible, find the lexicographically smallest sequence C after the rearrangement.

You are given T test cases. Solve each of them.

Input

The input is given from Standard Input in the following format:

```
T
case1
case2
⋮
caseT
```

Each case is given in the following format:

```
X Y Z
A1 A2 ... AX
B1 B2 ... BY
C1 C2 ... CZ
```

- All input values are integers.
- $1 \leq T \leq 10^5$
- $1 \leq X \leq Y \leq Z \leq 2 \times 10^5$
- $1 \leq A_i \leq Z$
- $1 \leq B_i \leq Z$
- $1 \leq C_i \leq Z$
- The sum of $X + Y + Z$ over all test cases in a single input is at most 4×10^5 .

Output

Print T lines. The i -th line should contain '-1' if the goal cannot be achieved for the i -th test case, or the lexicographically smallest rearranged C if it can be achieved.

Example

standard input	standard output
3	2 1 4 3
2 2 4	4 3 2 1
4 3	-1
2 1	
4 3 2 1	
2 3 4	
4 3	
3 2 1	
4 3 2 1	
3 3 3	
1 1 1	
2 2 2	
3 3 3	

Note

- In the first example, the possible rearranged sequences for C are $(2, 1, 4, 3)$ and $(4, 3, 2, 1)$. Print $(2, 1, 4, 3)$, which is the lexicographically smallest.
- In the second example, the only possible rearranged sequence for C is $(4, 3, 2, 1)$. Print $(4, 3, 2, 1)$.
- In the third example, the goal cannot be achieved. Print '-1'.