

HOME TOP CATALOG CONTESTS GYM PROBLEMSET GROUPS RATING EDU API CALENDAR HELP

PROBLEMS SUBMIT CODE MY SUBMISSIONS STATUS HACKS STANDINGS CUSTOM INVOCATION

# C. Pair Programming

time limit per test: 2 seconds memory limit per test: 512 megabytes

Monocarp and Polycarp are learning new programming techniques. Now they decided to try pair programming.

It's known that they have worked together on the same file for n+m minutes. Every minute exactly one of them made one change to the file. Before they started, there were already k lines written in the file.

Every minute exactly one of them does one of two actions: adds a new line to the end of the file or changes one of its lines.

Monocarp worked in total for n minutes and performed the sequence of actions  $[a_1, a_2, \ldots, a_n]$ . If  $a_i = 0$ , then he adds a new line to the end of the file. If  $a_i > 0$ , then he changes the line with the number  $a_i$ . Monocarp performed actions strictly in this order:  $a_1$ , then  $a_2$ , ...,  $a_n$ .

Polycarp worked in total for m minutes and performed the sequence of actions  $[b_1,b_2,\ldots,b_m]$ . If  $b_j=0$ , then he adds a new line to the end of the file. If  $b_j>0$ , then he changes the line with the number  $b_j$ . Polycarp performed actions strictly in this order:  $b_1$ , then  $b_2$ , ...,  $b_m$ .

Restore their common sequence of actions of length n+m such that all actions would be correct — there should be no changes to lines that do not yet exist. Keep in mind that in the common sequence Monocarp's actions should form the subsequence  $[a_1,a_2,\ldots,a_n]$  and Polycarp's — subsequence  $[b_1,b_2,\ldots,b_m]$ . They can replace each other at the computer any number of times.

Let's look at an example. Suppose k=3. Monocarp first changed the line with the number 2 and then added a new line (thus,  $n=2,\ a=[2,0]$ ). Polycarp first added a new line and then changed the line with the number 5 (thus,  $m=2,\ b=[0,5]$ ).

Since the initial length of the file was 3, in order for Polycarp to change line number 5 two new lines must be added beforehand. Examples of correct sequences of changes, in this case, would be [0, 2, 0, 5] and [2, 0, 0, 5]. Changes [0, 0, 5, 2] (wrong order of actions) and [0, 5, 2, 0] (line 5 cannot be edited yet) are not correct.

### Input

The first line contains an integer t ( $1 \le t \le 1000$ ). Then t test cases follow. Before each test case, there is an empty line.

Each test case contains three lines. The first line contains three integers k, n, m ( $0 \le k \le 100$ ,  $1 \le n$ ,  $m \le 100$ ) — the initial number of lines in file and lengths of Monocarp's and Polycarp's sequences of changes respectively.

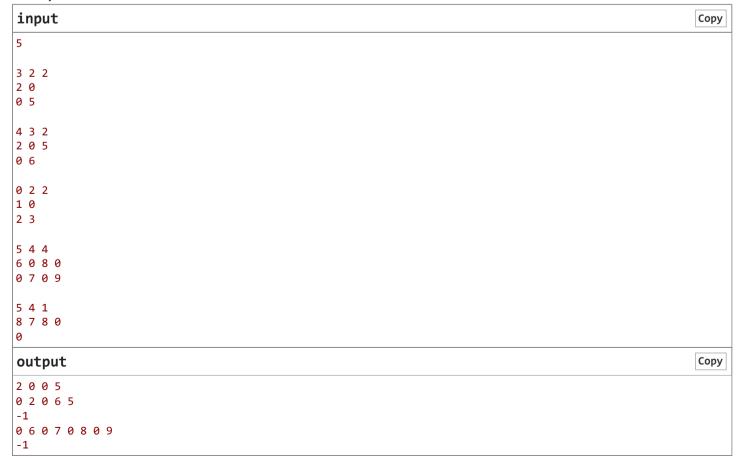
The second line contains n integers  $a_1, a_2, \ldots, a_n$  ( $0 \leq a_i \leq 300$ ).

The third line contains m integers  $b_1, b_2, \ldots, b_m$  ( $0 \le b_i \le 300$ ).

## **Output**

For each test case print any correct common sequence of Monocarp's and Polycarp's actions of length n+m or -1 if such sequence doesn't exist.

## Example



### Codeforces Round 731 (Div. 3)

#### **Finished**

## Practice



### → Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

### → Clone Contest to Mashup

You can clone this contest to a mashup.

Clone Contest



## → Last submissions

Submission	Time	Verdict
<u>268244882</u>	Jul/01/2024 02:51	Accepted



