# Problem G. Three Sevens

**Time limit** 2000 ms
**Mem limit** 262144 kB

Lottery "Three Sevens" was held for $m$ days. On day $i$, $n_i$ people with the numbers $a_{i,1}, \ldots, a_{i,n_i}$ participated in the lottery.

It is known that in each of the $m$ days, only one winner was selected from the lottery participants. The lottery winner on day $i$ was not allowed to participate in the lottery in the days from $i + 1$ to $m$.

Unfortunately, the information about the lottery winners has been lost. You need to find any possible list of lottery winners on days from $1$ to $m$ or determine that no solution exists.

## Input

Each test contains multiple test cases. The first line contains the number of test cases $t$ ($1 \le t \le 50\,000$). The description of the test cases follows.

The first line of each test case contains a single integer $m$ ($1 \le m \le 50\,000$) — the number of days in which the lottery was held.

Next, for each $i$ from $1$ to $m$, follows a two-line block of data.

The first line of each block contains a single integer $n_i$ ($1 \le n_i \le 50\,000$) — the number of lottery participants on day $i$.

The second line of the block contains integers $a_{i,1}, \ldots, a_{i,n_i}$ ($1 \le a_{i,j} \le 50\,000$) — lottery participants on day $i$. It is guaranteed that all the numbers $a_{i,1}, \ldots, a_{i,n_i}$ are pairwise distinct.

It is guaranteed that the sum of $n_i$ over all blocks of all test cases does not exceed $50\,000$.

## Output

For each test case, if there is no solution, print a single integer $-1$.

Otherwise, print $m$ integers $p_1, p_2, \ldots, p_m$ ($1 \le p_i \le 50\,000$) — lottery winners on days from $1$ to $m$. If there are multiple solutions, print any of them.

## Examples

| Input | Output |
| --- | --- |
| 3<br>3<br>4<br>1 2 4 8<br>3<br>2 9 1<br>2<br>1 4<br>2<br>2<br>1 2<br>2<br>2 1<br>4<br>4<br>1 2 3 4<br>1<br>1<br>1<br>4<br>1<br>3 | 8 2 1<br>-1<br>2 1 4 3 |

## Note

In the first test case, one of the answers is $[8, 2, 1]$ since the participant with the number $8$ participated on day $1$, but did not participate on days $2$ and $3$; the participant with the number $2$ participated on day $2$, but did not participate on day $3$; and the participant with the number $1$ participated on day $3$. Note that this is not the only possible answer, for example, $[8, 9, 4]$ is also a correct answer.

In the second test case, both lottery participants participated on both days, so any possible lottery winner on the day $1$ must have participated on the day $2$, which is not allowed. Thus, there is no correct answer.

In the third test case, only one participant participated on days $2, 3, 4$, and on day $1$ there is only one participant who did not participate in the lottery on days $2, 3, 4$ — participant $2$, which means $[2, 1, 4, 3]$ is the only correct answer to this test case.