# Problem 5 : Gandalf's party

## Problem

Gandalf, the wizard, is all set to host the most spectacular party on Middle Earth. He has a huge list of his friends whom he wants to invite at the party. But the strange creatures of middle earth hardly share the same level of camaraderie with each other as does Gandalf. So in order to avoid conflicts at his party, Gandalf decides to reach a consensus at who should be in his party and who not.

He makes his list of friends public to all of them and asks them to tell him their choices. But the wizard is smart. He gives 'each' of his friends the following choice:

1. You can request the presence of "at most" one person and the absence of as many people as you want
2. I can guarantee that at least one of your requests (absence or presence of a person) will be fulfilled
3. Additionally, if a person does not specify a person to be included, then Gandalf will make sure that he does not include all the persons that person wants excluded from the party.

Also, Gandalf guarantees that he will take into account the request of "all" of his friends, given the choices he has given them. For example, if Gandalf invites a hobbit, a dwarf, an elf and an eagle to his party, the following are correct requests:

- Hobbit - I want a dwarf or 'no eagle'
- Dwarf - I want a hobbit or 'no elf' or 'no eagle'
- Elf - I have no problems with anyone coming or not coming
- Eagle - I want a hobbit

If he is unable to fulfill any of his friend's wish then he looses his friendship.It is not necessary to call a person to ensure that their friendship continues but he must fulfill at least one of his wishes for the friendship to continue. Given preferences for each of his friends you will have to find out what is the minimum number of people he can hold party with to ensure that he remains friends with everyone or whether it is impossible to do so.

## Input

The first line of input consists of number of test cases $n$ and then $n$ cases follow. First line of each case is a number $m$ the total number of friends Gandalf intends to invite. This is followed by $m$ requests put forth by each friend starting from the 1st friend. Each request contains 2 lines of input , 1st containing the index of the person which is desired to be present, 2nd line the indices of the persons which are desired to be absent. All indices are 0 based. A $-1$ index in the 1st line denotes that the concerned person doesn't desire any particular person to be present. Similarly a $-1$ in 2nd line denotes that the concerned person doesn't desire any particular person to be absent.

For example in the case stated above m = 4 (hobbit(0), dwarf(1), elf(2) and eagle(3)).Input for this case will be

```
4
1
3
0
2 3
-1
-1
0
-1
```

## Output

The output for each case shall consist of minimum number of people he can hold party with, or "Impossible" if party cannot be held.

## Sample Input

```
2
6
3
2 4
3
2
2
-1
4
2 3
1
3 4
-1
0 1
7
-1
1 2 4
3
2 4
3
2
2
-1
4
2 3
1
```

```
3 4
-1
0 1
```

### Sample Output

```
4
Impossible
```