

## 10672 Marbles on a tree

$n$  boxes are placed on the vertices of a rooted tree, which are numbered from 1 to  $n$ ,  $1 \leq n \leq 10000$ . Each box is either empty or contains a number of marbles; the total number of marbles is  $n$ .

The task is to move the marbles such that each box contains exactly one marble. This is to be accomplished by a sequence of moves; each move consists of moving one marble to a box at an adjacent vertex. What is the minimum number of moves required to achieve the goal?



### Input

The input contains a number of cases. Each case starts with the number  $n$  followed by  $n$  lines. Each line contains at least three numbers which are:  $v$  the number of a vertex, followed by the number of marbles originally placed at vertex  $v$  followed by a number  $d$  which is the number of children of  $v$ , followed by  $d$  numbers giving the identities of the children of  $v$ .

The input is terminated by a case where  $n = 0$  and this case should not be processed.

### Output

For each case in the input, output the smallest number of moves of marbles resulting in one marble at each vertex of the tree.

### Sample Input

```

9
1 2 3 2 3 4
2 1 0
3 0 2 5 6
4 1 3 7 8 9
5 3 0
6 0 0
7 0 0
8 2 0
9 0 0
9
1 0 3 2 3 4
2 0 0
3 0 2 5 6
4 9 3 7 8 9
5 0 0
6 0 0
    
```

```
7 0 0
8 0 0
9 0 0
9
1 0 3 2 3 4
2 9 0
3 0 2 5 6
4 0 3 7 8 9
5 0 0
6 0 0
7 0 0
8 0 0
9 0 0
0
```

### Sample Output

```
7
14
20
```