

# Open-Pit Mining

## Time Limit: 1 second

Open-pit mining is a surface mining technique of extracting rock or minerals from the earth by their removal from an open pit or borrow. Open-pit mines are used when deposits of commercially useful minerals or rocks are found near the surface. Automatic Computer Mining (ACM) is a company that would like to maximize its profits by open-pit mining. ACM has hired you to write a program that will determine the maximum profit it can achieve given the description of a piece of land.

Each piece of land is modelled as a set of blocks of material. Block  $i$  has an associated value ( $v_i$ ), as well as a cost ( $c_i$ ), to dig that block from the land. Some blocks obstruct or bury other blocks. So for example if block  $i$  is obstructed by blocks  $j$  and  $k$ , then one must first dig up blocks  $j$  and  $k$  before block  $i$  can be dug up. A block can be dug up when it has no other blocks obstructing it.

### Input

The first line of input is an integer  $N$  ( $1 \leq N \leq 200$ ) which is the number of blocks. These blocks are numbered 1 through  $N$ .

Then follow  $N$  lines describing these blocks. The  $i$ th such line describes block  $i$  and starts with two integers  $v_i, c_i$  denoting the value and cost of the  $i$ th block ( $0 \leq v_i, c_i \leq 200$ ).

Then a third integer  $0 \leq m_i \leq N - 1$  on this line describes the number of blocks that block  $i$  obstructs. Following that are  $m_i$  distinct space separated integers between 1 and  $N$  (but excluding  $i$ ) denoting the label(s) of the blocks that block  $i$  obstructs.

You may assume that it is possible to dig up every block for some digging order. The sum of values  $m_i$  over all blocks  $i$  will be at most 500.

### Output

Output a single integer giving the maximum profit that ACM can achieve from the given piece of land.

#### Sample Input 1

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

#### Sample Output 1

```
2
```