Problem ID: pirates

Pirates are a dangerous bunch of people. They sail the seas, capture ships and steal their freight. Sometimes they may even attack coastal cities but most of the time they stay at their secret hideouts plotting their next attack. But whatever you may have heard of the frightening Pirates of the Caribbean, none of them was as dangerous as the crew of Scary McScarface. They were known for their efficient tactics and superior combat, which was interesting, because there were never any survivors of their attacks. So who was telling those stories?

Scary, doing a happy dance

You were. One dark night during your ship cruise through the Caribbean you accidentally found their secret hideout and - despite your overall lack of courage - you stayed to observe their training. That was when their name *Pirates of Dance* finally started to make sense. Their combat was incredibly well structured: They had agreed to never take more nor less than n steps in their routine, out of which the first - obviously - always had to be a fancy dance move. For every single one of these n steps, there were a number of optional actions they had to choose from, so for example their fancy dance move could be a Waltz, a Foxtrot, a back-flip, a head-spin, etc. whereas there might also be a step called *dangerous growl* in which they had to decide whether they shouted "Uh!", "Huh!" or "Ha!" menacingly. Since they were aware that it wouldn't be very frightening to first do a Waltz and then scream "Uh!", there were a number of rules, which options in step i could be followed by which options in step $i + 1$ such that the routine stayed frightening. In addition you overheard Scary McScarface say that as soon as a routine had been executed once, its capability to intimidate people would vanish. So to stay on the winning side of history, they would have to make sure, never to repeat an intimidating routine according to their rules.

You know that trying to attack their base will be futile, as long as there are still scary routines unused by them in previous attacks. That's why – looking at your notes – you start wondering how many attacks on vulnerable cities and ships this world will at most still have to endure before it will be safe to attack the Pirates of Dance and capture them successfully.

As the number of attacks may become very large and people may be intimidated by the prospect of that many attacks you decide to compute this number modulo $10^9 + 7$.

Input

Your notes on the rules for the routines that the pirates have agreed upon consist of:

- The number of steps $1 \le n \le 314$ on a single line.

- One line containing n space-separated integers $1 \le a_i \le 50$ $(1 \le i \le n)$ denoting how many options the pirates have agreed upon in step i.

Afterward, there will be $n - 1$ blocks. The ith block will describe, which options in step i may be followed by which options in step $i + 1$ such that the routine stays frightening.
The ith block consists of a_i lines of the following form:

- The jth line will start with an integer $0 \le m \le \min(a_{i+1}, 25)$ - the number of possible follow-up options in step $i + 1$ to the jth option in step i

- m distinct space-separated integers $0 \le b_k < a_{i+1}$ $(k \le m)$ follow, describing that option b_k in step $i + 1$ is safe to be used after option j in step i.

Output

Write out the number of attacks before the pirates will run out of intimidating routines, assuming that the pirates have not yet performed a routine according to these rules. This number should be printed modulo $10^9 + 7$.

Sample Input 1

```
2
1 1
1 0
```

Sample Output 1

```
1
```

Sample Input 2

```
2
2 2
2 0 1
0
```

Sample Output 2

```
2
```

Sample Input 3

```
3
2 3 2
3 0 1 2
1 0
2 0 1
1 1
1 0
```

Sample Output 3

```
6
```