Problem B
Watching a Movie

The ACM kingdom has $n \geq 2$ citizens, numbered from 0 to $n-1$. For each citizen $v \in \{0, 1, \ldots, n-1\}$, denote by $d(v)$ the number of mutual friends (in the ACM kingdom) of v. For each $v \in \{0, 1, \ldots, n-1\}$, assume $d(v) \geq 1$ and let $t(v) \in \{1, 2, \ldots, d(v)\}$. The ACM film studio invites a set of citizens, called the seeds, to watch a new movie. Whenever at least $t(v)$ mutual friends of a citizen $v \in \{0, 1, \ldots, n-1\}$ have watched the movie, v will also watch the movie. The process continues asynchronously until no more citizens will watch the movie. The question is: What is the minimum number of seeds needed so that all citizens will have watched the movie at the end?

Consider the undirected graph G with the vertex set $\{0, 1, \ldots, n-1\}$ and with the edge set containing precisely all unordered pairs (i, j) of mutual friends. Assume G to be connected and acyclic. So G is an undirected tree.

Technical Specification

1. $2 \leq n \leq 35$.
2. For all $v \in \{0, 1, \ldots, n-1\}$, v is not a mutual friend of v.

Input Format

The first line of input contains a positive integer m ($m \leq 10$) indicating the number of test cases that follows. For each test case, the first line contains serveral integers. The first integer is n, followed by n integers denoting $t(0)$, $t(1)$, ..., $t(n-1)$, respectively. The next line contains an integer p indicating the number of unordered pairs of mutual friends. The next p lines each contains two integers denoting a pair of mutual frineds. All integers are separated by white space(s).

Output Format

For each test case, output the minimum number of seeds needed so that all citizens will have watched the movie at the end.

Sample Input

```
5
6 2 2 1 2 1 1
5
0 1
5 3
0 3
4 1
2 3
```

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

Sample Output for the Sample Input

```
2
1
1
2
3
```