P versus NP

It is the year 2030 and even though the world has reach unimaginable heights in the field of Computer Science, the age-old legendary problem of P=NP (http://en.wikipedia.org/wiki/P_versus_NP_problem) still remains unsolved. At a conference, N computer scientists are asked to divide themselves into two teams. The first team will consist of those people who claim that P = NP whereas the second team will be composed to people who claim that P != NP. Note that either of the teams can be empty.

However, some pair of people are collaborators and would want to remain on the same team. If a pair of collaborators are in different teams, then we say that their collaboration is "weakened". Also, if a person goes to the team to which he doesn't belong(i.e the person belives that P=NP and yet goes to the opposite team or vice versa), then we call him a "traitor". You need to divide the group of N people into the two teams in such a way that sum of the number of "weakened" collaborations and number of "traitors" is minimized. You only need to find the value of this sum.

Input Format

First line of the input contains the number of test cases T. For each test case, the first line contains an integer N (numbered from 1 to N), the number of computer scientists. This is followed by an integer M containing the number of collaborator pairs. The next M lines contain two space separated integers x and y denoting that x and y are collaborators. The last line will contain N integers wherein if the ith integer is 1, it indicates that the ith scientist thinks that P=NP and if the ith integer is 0, then the ith scientist thinks that P!=NP.

Output Format

Print T integers (each in one line), denoting the required minimum sum.

Constraints

1<=T<=100
1<=N<=100
0<=M<=(N*(N-1))/2
1<=x,y<=N
x and y will be distinct.

Time Limit

1 second.

Sample Input

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

Sample Output

```
2
```

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