

10988 From G to H and back

“All right, I’m stumped... and I think I’m supposed to be.”

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There is a funny transformation that you can do with a graph. We start with an undirected graph, G , and build a new graph, H . G has n vertices and m edges. For each edge in G , we create a vertex in H . Two vertices in H are connected by an edge if and only if their corresponding edges in G share a vertex. H will have m vertices and p edges.

That’s easy. But what about reconstructing G , given H ?

Input

The first line of input gives the number of cases, N . N test cases follow. Each one starts with two lines containing m (at most 320) and p . p lines follow, each containing two different vertices (numbered from 1 to m) in H which are connected by an edge.

Output

For each test case, output one line containing ‘Case # x :’ followed by either ‘yes’ or ‘no’, depending on whether there exists some graph G that produces the given graph H .

Sample Input

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

Sample Output

```
Case #1: yes
Case #2: no
```