Online Competition Africa and Arabia 2011

Questions asked 1

Submissions

Vanishing Numbers

10pt	Not attempted **27/126 users** correct (21%)
17pt	Not attempted **3/27 users** correct (11%)

Battlefield

12pt	Not attempted **20/61 users** correct (33%)
21pt	Not attempted **17/19 users** correct (89%)

Radio Receiver

15pt	Not attempted **9/23 users** correct (39%)
25pt	Not attempted **6/9 users** correct (67%)

Top Scores

RalfKistner	83
amrSamir	83
Nooodles	83
mohamedafattah	83
fegla	60
seanwentzel	58
TheKro	50
emadwill	48
Keegan	43
mRefaat88	43

Problem B. Battlefield

This contest is open for practice. You can try every problem as many times as you like, though we won't keep track of which problems you solve. Read the Quick-Start Guide to get started.

Small input 12 points	Solve B-small
Large input 21 points	Solve B-large

Problem

You are playing a game where the battlefield consists of **N** cities and **R** bidirectional roads. Your goal is to start at some city **C** of your choice and visit all **R** roads exactly once ending this trip at **C**. If this is not possible you must add the minimum number of additional roads to the initial set of roads to make this trip feasible. Please note that there might be more than one road connecting the same pair of cities and that you are allowed to add roads between any pair of cities regardless of whether they already had roads connecting them or not as shown in the sample input/output.

Input

The first line of input gives the number of test cases, **T**. **T** test cases follow. For each test case there will be:

- One line containing the value **N**, the number of cities.
- One line containing the value **R**, the number of roads.
- **R** lines corresponding to the roads. Each contains 2 values **A** and **B** separated by one space. **A** and **B** are 2 distinct integers ($0 \leq$ **A**,**B** $<$ **N**) indicating the end points of that road.

Output

For each test case, output one line containing "Case #**x**: ", where **x** is the number of the test case, followed by the minimum number of roads needed.

Limits

$1 \leq$ **T** ≤ 30
$2 \leq$ **N** ≤ 1000

Small dataset

$1 \leq$ **R** ≤ 15

Large dataset

$1 \leq$ **R** $\leq 10^4$

Sample

Input	Output
3 2 2 0 1 0 1 3 3 1 2 1 2 2 1 4 5 0 1 2 0 0 3 1 2 3 1	Case #1: 0 Case #2: 1 Case #3: 1