

## 11859 Division Game

Division game is a 2-player game. In this game, there is a matrix of positive integers with  $N$  rows and  $M$  columns. Players make their moves in turns. In each step, the current player selects a row. If the row contains all 1s, the player loses. Otherwise, the player can select any number of integers (but at least 1 and each of them should be greater than 1) from that row and then divides each of the selected integers with any divisor other than 1. For example, 6 can be divided by 2, 3 and 6, but cannot be divided by 1, 4 and 5. The player who first makes the matrix all 1s wins. In other words, if in his/her move, player gets the matrix with all 1s, then he/she loses. Given the matrix, your task is to determine whether the first player wins or not. Assume that both of the players will play perfectly to win.

### Input

The first line has a positive integer  $T$ ,  $T \leq 50$ , denoting the number of test cases. This is followed by each test case per line.

Each test case starts with a line containing 2 integers  $N$  and  $M$  representing the number of rows and columns respectively. Both  $N$  and  $M$  are between 1 and 50 inclusive. Each of the next  $N$  line each contains  $M$  integers. All these integers are between 2 and 10000 inclusive.

### Output

For each test case, the output contains a line in the format 'Case # $x$ :  $M$ ', where  $x$  is the case number (starting from 1) and  $M$  is 'YES' when the first player has a winning strategy and 'NO' otherwise.

### Sample Input

```
5
2 2
2 3
2 3
2 2
4 9
8 5
3 3
2 3 5
3 9 2
8 8 3
3 3
3 4 5
4 5 6
5 6 7
2 3
4 5 6
7 8 9
```

### Sample Output

```
Case #1: NO
```

Case #2: NO  
Case #3: NO  
Case #4: YES  
Case #5: YES