

Round B China New Grad  
Test 2014

[A. Sudoku Checker](#)

[B. Meet and party](#)

[C. Hex](#)

**D. Dragon Maze**

[E. Ignore all my comments](#)

[Questions asked](#)

#### Submissions

##### Sudoku Checker

5pt Not attempted  
1471/2010 users  
correct (73%)

9pt Not attempted  
1146/1443 users  
correct (79%)

##### Meet and party

9pt Not attempted  
496/823 users  
correct (60%)

15pt Not attempted  
47/409 users  
correct (11%)

##### Hex

12pt Not attempted  
19/260 users  
correct (7%)

13pt Not attempted  
14/18 users correct  
(78%)

##### Dragon Maze

8pt Not attempted  
336/594 users  
correct (57%)

12pt Not attempted  
229/330 users  
correct (69%)

##### Ignore all my comments

17pt Not attempted  
216/468 users  
correct (46%)

0pt Not attempted

#### Top Scores

TankEngineer	100
Nekosyndrome	100
I521530	100
W.Junqiao	100
LTzycLT	100
iloahz	100
drazil	87
navi	85
wishstudio	85
redsniper	76

## Problem D. Dragon Maze

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  
8 points

Solve D-small

Large input  
12 points

Solve D-large

### Problem

You are the prince of Dragon Kingdom and your kingdom is in danger of running out of power. You must find power to save your kingdom and its people. An old legend states that power comes from a place known as Dragon Maze. Dragon Maze appears randomly out of nowhere without notice and suddenly disappears without warning. You know where Dragon Maze is now, so it is important you retrieve some power before it disappears.

Dragon Maze is a rectangular maze, an  $N \times M$  grid of cells. The top left corner cell of the maze is (0,0) and the bottom right corner is ( $N-1$ ,  $M-1$ ). Each cell making up the maze can be either a dangerous place which you never escape after entering, or a safe place that contains a certain amount of power. The power in a safe cell is automatically gathered once you enter that cell, and can only be gathered once. Starting from a cell, you can walk up/down/left/right to adjacent cells with a single step.

Now you know where the entrance and exit cells are, that they are different, and that they are both safe cells. In order to get out of Dragon Maze before it disappears, you must walk from the entrance cell to the exit cell taking as few steps as possible. If there are multiple choices for the path you could take, you must choose the one on which you collect as much power as possible in order to save your kingdom.

### Input

The first line of the input gives the number of test cases,  $T$ .  $T$  test cases follow.

Each test case starts with a line containing two integers  $N$  and  $M$ , which give the size of Dragon Maze as described above. The second line of each test case contains four integers  $en_x$ ,  $en_y$ ,  $ex_x$ ,  $ex_y$ , describing the position of entrance cell ( $en_x$ ,  $en_y$ ) and exit cell ( $ex_x$ ,  $ex_y$ ). Then  $N$  lines follow and each line has  $M$  numbers, separated by spaces, describing the  $N \times M$  cells of Dragon Maze from top to bottom. Each number for a cell is either -1, which indicates a cell is dangerous, or a positive integer, which indicates a safe cell containing a certain amount of power.

### Output

For each test case, output one line containing "Case #x: y", where x is the case number (starting from 1). If it's possible for you to walk from the entrance to the exit, y should be the maximum total amount of power you can collect by taking the fewest steps possible. If you cannot walk from the entrance to the exit, y should be the string "Mission Impossible." (quotes for clarity). Please note that the judge requires an exact match, so any other output like "mission impossible." or "Mission Impossible" (which is missing the trailing period) will be judged incorrect.

### Limits

The amount of power contained in each cell will not exceed 10,000.

$1 \leq T \leq 30$ .

$0 \leq en_x, ex_x < N$ .

$0 \leq en_y, ex_y < M$ .

### Small dataset

$1 \leq N, M \leq 10$ .

### Large dataset

$1 \leq N, M \leq 100$ .

### Sample

Input	Output
2	Case #1: Mission Impossible.
2 3	Case #2: 7
0 2 1 0	
2 -1 5	

```
3 -1 6
4 4
0 2 3 2
-1 1 1 2
1 1 1 1
2 -1 -1 1
1 1 1 1
```

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