



250 Yonge Street, Suite 2201
Toronto, Ontario, M5B 2L7

Main: 647-715-5257 | Sales: 647-962-2668

A squad of robotic rovers are to be landed by NASA on a plateau on Mars. This plateau, which is curiously rectangular, must be navigated by the rovers so that their on-board cameras can get a complete view of the surrounding terrain to send back to Earth.

A rover's position and location is represented by a combination of x and y co-ordinates and a letter representing one of the four cardinal compass points. The plateau is divided up into a grid to simplify navigation. An example position might be 0, 0, N, which means the rover is in the bottom left corner and facing North.

Imagine a grid that looks something like this:

Diagram illustrating a 10x10 grid structure, likely representing a matrix or a spatial layout. The grid is labeled with indices 0 to 9 on both the horizontal (bottom) and vertical (left) axes. The grid is composed of dots forming a 10x10 pattern. The labels 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 are positioned below the grid. The labels 1, 2, 3, 4, 5, 6, 7, 8, 9 are positioned to the left of the grid. The labels N, W, and S are positioned to the right of the grid, corresponding to rows 9, 8, and 7 respectively. A dashed line is drawn above the grid, and a solid line is drawn below it.

In order to control a rover, NASA sends a simple string of letters. The possible letters are 'L', 'R' and 'M'.



“Future Made Simple”

Tornado Incorporated

250 Yonge Street, Suite 2201
Toronto, Ontario, M5B 2L7

Main: 647-715-5257 | **Sales:** 647-962-2668

- 'L' and 'R' makes the rover spin 90 degrees left or right respectively, without moving from its current spot.
- 'M' means move forward one grid point, and maintain the same heading.

Assume that the square directly North from (x, y) is (x, y+1).

The Setup

Input

The first line of input is the upper-right coordinates of the plateau, the lower-left coordinates are assumed to be 0,0.

The rest of the input is information pertaining to the rovers that have been deployed. Each rover has two lines of input. The first line gives the rover's position, and the second line is a series of instructions telling the rover how to explore the plateau.

The position is made up of two integers and a letter separated by spaces, corresponding to the x and y co-ordinates and the rover's orientation.

Each rover will be finished sequentially, which means that the second rover won't start to move until the first one has finished moving.

Your program should accept 5 inputs.



“Future Made Simple”

Tornado Incorporated

250 Yonge Street, Suite 2201
Toronto, Ontario, M5B 2L7

Main: 647-715-5257 | **Sales:** 647-962-2668

Output

The output for each rover should be its final co-ordinates and heading.

INPUT AND OUTPUT

Test Input:

```
5 5 > Our first line is our plateau size.
1 2 N > Lines 2 and 3 are paired, with the first being
our initial start position and header,
LMLMLMLMM > and the second line being a series of move and
turn instructions.
3 3 E > Another 2-line pair, 1 pair per rover.
MMRMMRMRRM
```

Expected Output:

```
1 3 N > When rover bot is done doing its instructions,
output its current position
5 1 E > The first line is the first rover, the second
line is the next rover
```