

# Problem F

## Mob Grinder

Time Limit: 5 Seconds, Memory Limit: 2G

In a certain popular sandbox video game, one can build a structure called a *mob grinder*. A mob grinder consists of an  $N \times M$  rectangular grid of tiles. Monsters, also known as “mobs,” appear continuously at random places on the grid. The goal of a mob grinder is to move all of the monsters to the top-right tile in the grid, no matter where they originally appear. To accomplish this goal, each tile (except for the top-right tile) has a conveyor belt on it with a specified direction (up, right, down, or left). A monster on a conveyor belt gets moved to the orthogonally adjacent tile in the direction specified by the conveyor belt orientation.

Your job is to place a conveyor belt on each tile (other than the top-right corner) so that no matter where a monster appears on the grid, it will get moved to the top-right corner after a finite amount of time, without ever leaving the bounds of the grid. However, there is a limit on how many conveyor belts you can use of each orientation: your final design must have exactly  $U$  conveyor belts going up,  $R$  going right,  $D$  going down, and  $L$  going left.

You are asked to design multiple mob grinders, each with a specification of how many conveyor belts of each type you are allowed to use. Design a valid mob grinder that meets each specification, if possible.

### Input

The first line of input contains an integer  $T$  ( $1 \leq T \leq 10^5$ ): the number of mob grinders you need to design.

Each of the next  $T$  lines of input contains six space-separated integers that describe one mob grinder specification. The first two integers,  $N$  and  $M$ , ( $1 \leq N, M$  and  $N \cdot M \leq 10^5$ ) are the number of rows and columns in the grid, respectively. The last four,  $U, R, D, L$  ( $0 \leq U, R, D, L$  and  $U + R + D + L = (N \cdot M) - 1$ ), are the number of times you must use each conveyor belt orientation in your design.

It is guaranteed that the sum of  $N \cdot M$  over all  $T$  mob grinders does not exceed  $10^5$ .

## Output

Print  $T$  mob grinder designs, one for each specification. Separate consecutive designs with a single empty line.

If it is impossible to construct a valid mob grinder respecting the given constraints for the given specification, print `impossible`. Otherwise, print an  $N \times M$  grid of ASCII characters. The top-right tile must be a `*`. Every other character in the grid must be either `U`, `R`, `D`, or `L`, representing the orientation of the conveyor belt on that grid tile.

**This problem is whitespace-sensitive.** You *must* separate each mob grinder design with exactly one empty line (containing just a newline character). You *must not* print an empty line, or any other extraneous output, after the last mob grinder design (though the last line of output must be terminated with a newline). Please see the Sample Output for examples of how to correctly format your mob grinder designs.

### Sample Input 1

```
2
4 3 5 3 1 2
1 2 0 1 0 0
```

### Sample Output 1

```
RR*
URU
UDU
ULL

R*
```

### Sample Input 2

```
3
3 3 0 0 0 8
2 2 0 2 0 1
1 1 0 0 0 0
```

### Sample Output 2

```
impossible

impossible

*
```