## Robots                                                      P16248_en
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We have a board $n \times m$ where each square is marked with a S, L, R, or E. Initially, a robot is placed in any square, looking at the north (N), east (E), south (S) or west (W). Repeteadly, the robot does two operations:

- To turn or to explode:

    – If the robot is in a square marked with a L, it turns 90 degrees to the left;
    – If the robot is in a square marked with a R, it turns 90 degrees to the right;
    – If the robot is in a square marked with a S, it does not turn (it continues straight);
    – If the robot is in a square marked with an E, it explodes.

- Advance: The robot advances a square in the direction it is looking at (if it did not explode previously, of course).

Write a program that indicates if the robot will go out of the board, it will explode or it will be moving in the board forever.

### Input

The input consists of a natural $t \geq 0$ followed by $t$ test data separated by a line in white. Each test data consists of a line with $n$ and $m$ (both of them between 1 and 60), followed by $n$ lines with $m$ characters (S, L, R, or E) each one. Finally, the last line of each test data contains the initial row (a number between 1 and $n$), and the initial direction (N, E, S or W).

### Output

For each test data, your program must print "explodes", "goes out", or "does not go out" as required.

### Sample input

```
5

1 4
XSSS
1 4 W

4 5
XXRSR
SSLXS
XXXXS
XXLSR
2 1 E

2 2
RR
RR
1 1 N

2 3
XLL
SSL
2 1 E

1 1
X
```

### Sample output

```
explodes
explodes
goes out
goes out
explodes
```

## Problem information

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