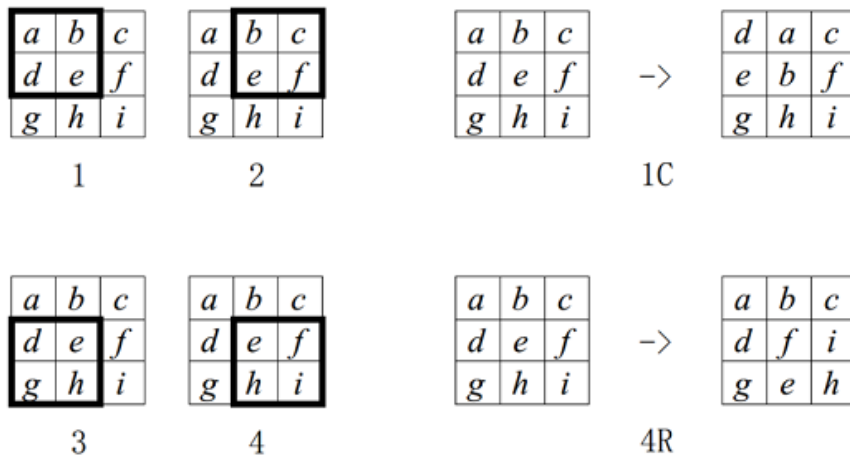


# Problem A. Magic Square

Input file:            standard input  
 Output file:          standard output  
 Time limit:           1 second  
 Memory limit:        128 megabytes

A magic square is a  $3 \times 3$  square, where each element is a single digit between 1 and 9 inclusive, and each digit appears exactly once. There are 4 different contiguous  $2 \times 2$  subsquares in a magic squares, which are labeled from 1 to 4 as the following figure shows. These  $2 \times 2$  subsquares can be rotated. We use the label of the subsquare with an uppercase letter to represent a rotation. If we rotate the subsquare clockwise, the letter is 'C'; if we rotate it counterclockwise, the letter is 'R'. The following figure shows two different rotations.



Now, given the initial state of a magic square and a sequence of rotations, please print the final state of the magic square after these rotations are performed.

## Input

The first line of input is a single integer  $T$  ( $1 \leq T \leq 100$ ), the number of test cases.

Each test case begins with a single integer  $n$  ( $1 \leq n \leq 100$ ), the number of rotations. It is then followed by a  $3 \times 3$  square, where every digit between 1 and 9 inclusive appears exactly once, representing the initial state of the magic square. The following  $n$  lines describe the sequence of rotations.

The test data guarantees that the input is valid.

## Output

For each test case, display a  $3 \times 3$  square, denoting the final state of the magic square.

## Example

standard input	standard output
1	413
2	569
123	728
456	
789	
1C	
4R	