

Yi Sima was one of the best counselors of Cao Cao. He likes to play a funny game himself. It looks like the modern Sudoku, but smaller.

Actually, Yi Sima was playing it different. First of all, he tried to generate a  $4 \times 4$  board with every row contains 1 to 4, every column contains 1 to 4. Also he made sure that if we cut the board into four  $2 \times 2$  pieces, every piece contains 1 to 4.

Then, he removed several numbers from the board and gave it to another guy to recover it. As other counselors are not as smart as Yi Sima, Yi Sima always made sure that the board only has one way to recover.

Actually, you are seeing this because you've passed through to the Three-Kingdom Age. You can recover the board to make Yi Sima happy and be promoted. Go and do it!!!

## Input

The first line of the input gives the number of test cases,  $T$  ( $1 \leq T \leq 100$ ).  $T$  test cases follow. Each test case starts with an empty line followed by 4 lines. Each line consist of 4 characters. Each character represents the number in the corresponding cell (one of '1', '2', '3', '4'). '\*' represents that number was removed by Yi Sima.

It's guaranteed that there will be exactly one way to recover the board.

## Output

For each test case, output one line containing 'Case #x:', where  $x$  is the test case number (starting from 1). Then output 4 lines with 4 characters each. indicate the recovered board.

## Sample Input

3

\*\*\*\*

2341

4123

3214

\*243

\*312

\*421

\*134

\*41\*

\*\*3\*

2\*41

4\*2\*

## Sample Output

Case #1:

1432

2341

4123

3214

Case #2:

1243

4312

3421

2134

Case #3:

3412

1234

2341

4123