



Problem H. Sudoku

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 4×4 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 2×2 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 and output

Sample Input	Sample Output
3	Case #1:
****	1432
2341	2341
4123	4123
3214	3214
*243	Case #2:
*312	1243
*421	4312
*134	3421
41	2134
**3*	Case #3:
2*41	3412
4*2*	1234
	2341
	4123