Check Mate

I am quite sure all of you are quite familiar with Chess. Suppose, you are given a shape of the board (not the traditional chess board) and you need to place rooks in the board. Any two pieces of rook cannot be placed in any of the board in the same row or same column. You need write a program to solve a given shape and size of the board, placing exactly K rooks in all possible placements in the grid.
NB: You can only place rooks in any of the ('*') marked position.

Input :
Input starts with an integer T (≤ 50), denoting the number of test cases.
Each case starts with two integer numbers N, K representing the size of the board is N*N and K rooks need to be placed. Then N lines describe the shape of the board: N characters per line, where ('*') represents the board area where you can place a rook. (1 <= N <= 8 and K <= N)

Output:
For each case, print the case number followed by number of ways you can put K rook in the board. See the sample I/O.

Sample Input	Sample Output
3 2 1 *. .* 4 4 ...* ..*. .*.. *... 3 2 *** *** ***	Case 1: 2 Case 2: 1 Case 3: 18