Window Blinds

Now that spring is here and the sun is shining bright, people are starting to lower their blinds. Štefica is an elderly woman who likes to keep track of what other people in the neighbourhood are doing and then talk about it behind their backs. This year, she is particularly interested in who is lowering blinds in the building across the street, and how low are they lowering them.

We will represent each window with a 4 x 4 grid, with asteriskes representing lowered blinds. Štefica can see a window in one of the following 5 states:

The building across the street has N windows at each of the M floors. Given the current building state, find out how many windows are in each of the 5 states shown above.

Input

The first line of input contains space separated integers M and N (1 ≤ M, N ≤ 100). The following lines describe the current building state. Each window is represented with one of the 4 x 4 grids shown above, and windows are separated using character „#". See the example input for clarification. Building description will have exactly 5M + 1 lines each having 5N + 1 characters.

Output

Output should contain 5 space separated integers, number of windows for each type in order shown above. Sum of these numbers is M*N.

Sample input

Sample output

Sample input	Sample output

`1 2`
`###########`
`#....#****#`
`#....#****#`
`#....#....#`
`#....#....#`
`###########`
	`1 0 1 0 0`

`2 3`
`################`
`#****#****#****#`
`#****#****#****#`
`#****#....#****#`
`#....#....#****#`
`################`
`#....#****#****#`
`#....#****#....#`
`#....#....#....#`
`#....#....#....#`
`################`
	`1 1 2 1 1`