

Problem O. osu!mania

Time limit 1000 ms

Mem limit 262144 kB

You are playing your favorite rhythm game, osu!mania. The layout of your beatmap consists of n rows and 4 columns. Because notes at the bottom are closer, you will process the bottommost row first and the topmost row last. Each row will contain exactly one note, represented as a '#'.

For each note $1, 2, \dots, n$, in the order of processing, output the column in which the note appears.

Input

The first line contains t ($1 \leq t \leq 100$) — the number of test cases.

For each test case, the first line contains n ($1 \leq n \leq 500$) — the number of rows of the beatmap.

The following n lines contain 4 characters. The i -th line represents the i -th row of the beatmap from the top. It is guaranteed that the characters are either '.' or '#', and exactly one of the characters is '#'.

It is guaranteed that the sum of n over all test cases does not exceed 500.

Output

For each test case, output n integers on a new line, the column that the i -th note appears in for all i from 1 to n .

Examples

Input	Output
3 4 #... .#.. ..#. ...# 2 .#.. .#.. 1 ...#	4 3 2 1 2 2 4