The goal of the game is to find where all the mines are located within a \( M \times N \) field.

The game shows a number in a square which tells you how many mines there are adjacent to that square. Each square has at most eight adjacent squares. The \( 4 \times 4 \) field on the left contains two mines, each represented by a “*” character. If we represent the same field by the hint numbers described above, we end up with the field on the right:

\[
\begin{array}{cccc}
* & \ldots & * & 100 \\
. & \ldots & 2 & 210 \\
* & \ldots & 1 & *10 \\
. & \ldots & 1 & 110 \\
\end{array}
\]

**Input**

The input will consist of an arbitrary number of fields. The first line of each field contains two integers \( N \) and \( M \) (0 \( < N, M \leq 100 \)) which stand for the number of lines and columns of the field, respectively.

Safe squares are denoted by “.” and mine squares by “*”, both without the quotes.

**Output**

The \( N \) lines should contain the field with the “.” characters replaced by the number of mines adjacent to that square.

**Sample Input**

\[
\begin{array}{ccc}
3 & 5 \\
** & \ldots & ** \\
. & \ldots & 3 & 3200 \\
* & \ldots & 1 & *100 \\
\end{array}
\]

**Sample Output**

\[
\begin{array}{ccc}
3 & 5 \\
** & \ldots & **100 \\
. & \ldots & 33200 \\
* & \ldots & 1*100 \\
\end{array}
\]