

Square Subarea

Time limit: 1 sec

Given a grid of **R** row and **C** column, we can identify each cell in the grid by a coordinate (r,c) where $(1 \leq r \leq \mathbf{R} \text{ and } 1 \leq c \leq \mathbf{C})$. A square subarea in a grid, defined by the coordinate (r1,c1) and a size k, is every cell (r,c) such that $(r1 \leq r \leq r1+k-1 \text{ and } c1 \leq c \leq c1+k-1)$. Assume that each cell contains either a number 0 or 1, your task is to find the largest square subarea that every cell in the sub area is number 1.

For example, the largest square subarea in the following grid has size 3, identified by an underlined 1. Notice that there are also another subarea having size 3 as well.

```
0 0 0 1 0
0 1 1 1 1
0 0 1 1 1
0 0 1 1 1
0 0 1 1 1
```

Input

- The first line contains two integers R and C which are the number of rows and columns of the grid. ($1 \leq \mathbf{R} \leq 1000$ and $1 \leq \mathbf{C} \leq 1000$).
- The following **R** lines give the number in the grid. Each line corresponds to a row in the grid, starting from row 1 to row **R**. For each line, there is a string of '0' and '1' of length **C**. Each character in the string represents a value in each cell in the corresponding row, starting from column 1 to column **C**.

Output

The output contains a single integer representing the size k of the largest square subarea.

Example

Input	Output
5 5 00010 01111 00111 00111 00111	3
1 10 1111111011	1