Perimeter

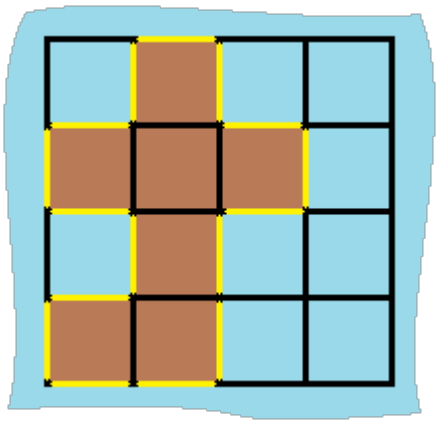
time limit per test: 1 second (2 seconds for Python)
memory limit per test: 256 megabytes
input: standard input
output: standard output

points: 100 · problem code: perimeter · author: kahootist

Problem Statement

You have a square grid with length n. Each cell in the grid can be either 1 or 0.

Return the length of the perimeter required to surround all the 1 cells in the grid.



Input

Your first line will contain n.

Your next n lines will each contain n grids of 1's and 0s.

Output

A single integer representing the unit perimeter required to surround all the 1 cells in the grid.

Constraints

For all test cases:

- $1 \leq n \leq 10^3$
- All cells will be either 1 or 0.

Example 1

Input

```
3
010
111
010
```

Output

```
12
```

Example 2

Input

```
4
0110
1110
0000
0110
```

Output

```
16
```

Example 3

Input

```
2
01
10
```

Output

```
8
```

Python Template

```
n = int(input())
grid = [list(map(int, input())) for _ in range(n)]
```