**TASK AB1. SUPERSTITIOUS BLACK CATS**

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Several black cats are lying on a rectangular meadow. Unfortunately, the automatic sprinkler system goes on, and the cats have to hastily leave the meadow by moving to its edges. However, because the cats are superstitious, no cat may cross another cat’s path – that is, step on a spot where another cat has previously stepped.

The meadow is divided into *NxM* squares, in each of which there is initially at most one cat. Cats may only move from their current square to one of the 4 adjacent squares that share a common edge with it, but only if no other cat has already stepped there. A cat that moves to an edge square is considered to have successfully left the meadow.

Write a program **cats** to find the maximum number of cats that can successfully leave the meadow given those restrictions.

Figure 1. An example in which 16 cats are sitting on a meadow with dimensions 5x6 (N=5, M=6).   
All cats except the shaded one can leave the meadow following the paths shown with arrows.

**Input**

The first line of the standard input contains the positive integer *N*. The next *N* lines describe the initial state of the meadow, each containing exactly *M* characters 1 or 0, depending on whether that square contains a cat (1) or not (0).

*N* and *M* are integers between 1 and 30, inclusive.

**Output**

The maximum number of cats that can successfully leave the meadow.

**Example 1: Example 2:**

*Input: Input:*

4 5

0001 111010

0110 000101  
1010 111101  
*Output:* 111001  
5 001000

*Output:*

15