Mock CCC '18 Contest 5 S5 - California Boggle

Time limit: 0.6s   **Memory limit:** 1G
Java: 1.0s

Given an $N \times N$ grid of letters, one can select four squares such that the first is a `C`, the second is an `A`, the third is an `L`, and the last is an `I`, and two adjacent squares in the pattern share at least a corner.

This selection process is repeated as many times as possible, with the caveat that a given square can only be selected at most once.

Compute the maximum number of distinct sets of letters that can be selected.

Constraints

$1 \leq N \leq 200$

In tests worth 3 marks, you may assume $N \leq 4$.

In tests worth an additional 5 marks, you may assume $N \leq 10$.

Input Specification

The first line of the input contains a single integer, N.

The next N lines contain N characters, all of which appear in `CALI`.

Output Specification

Output, on a single line, the maximum number of sets that can be selected.

Sample Input

```
4
CALI
ILAC
CLLC
IAAI
```

Sample Output

```
4
```