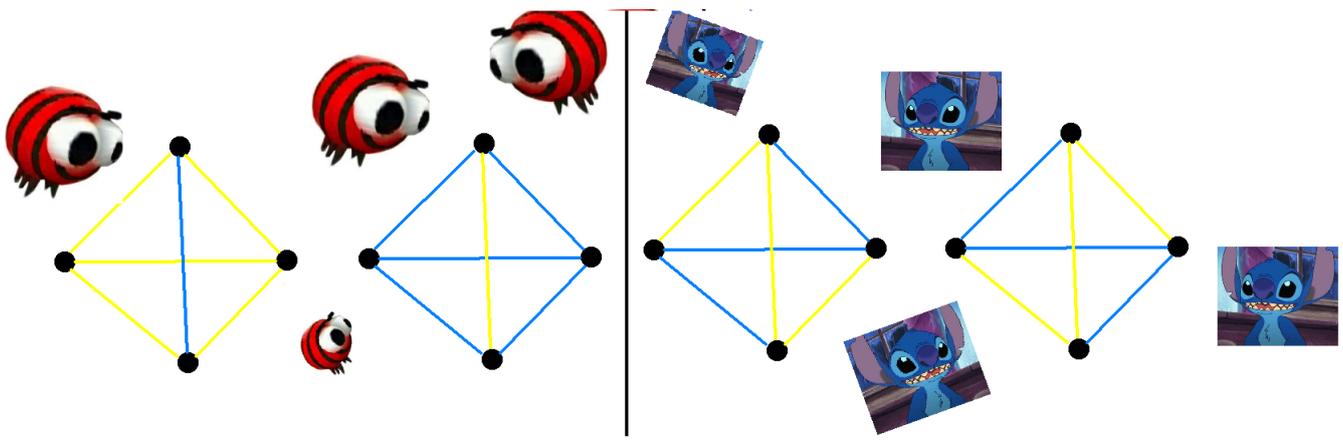


Problem G. Glory Graph

Input file: *standard input*
 Output file: *standard output*
 Time limit: 3 seconds
 Memory limit: 512 mebibytes

You are given a complete undirected graph on n vertices, each edge is colored blue or yellow. Anton likes a subgraph on 4 vertices if, among its 6 edges, 5 edges have one color, and the 6-th edge has another color. Yahor likes a subgraph on 4 vertices if 3 of its edges are yellow, 3 are blue, and no 3 vertices form a triangle with edges of the same color.

On the image below, on the left, you can see examples of graphs Anton likes. On the right, there are examples of graphs Yahor likes.



Let A be the number of subgraphs Anton likes, and Y be the number of subgraphs Yahor likes. They want to know who likes more subgraphs. To help them, find the value $Y - A$.

Input

The first line of the input contains a single integer n ($4 \leq n \leq 2000$), the number of vertices in the graph.

The i -th of the next i lines contains a string s_i of length n .

It is guaranteed that:

- For every i from 1 to n , the i -th character of s_i is '-'
- For every $i \neq j$, the j -th character of s_i is either 'Y' or 'B', where 'Y' shows that the edge between vertices i and j is yellow, and 'B' shows that it is blue
- For every $i \neq j$, the j -th character of s_i is equal to the i -th character of s_j

Output

Output a single integer: the value $Y - A$.

Examples

standard input	standard output
5 -YBYB Y-BBB BB-BY YBB-Y BBYY-	2
6 -YYYYY Y-YYBB YY-YYY YYY-YB YBYY-Y YBYBY-	-6

Note

In the first example, Yahor likes subgraphs on vertices 1, 2, 4, 5 and on vertices 1, 3, 4, 5. Anton doesn't like any subgraphs there.