A. Cupboards

time limit per test: 2 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

One foggy Stockholm morning, Karlsson decided to snack on some jam in his friend Lillebror Svantenson's house. Fortunately for Karlsson, there wasn't anybody in his friend's house. Karlsson was not going to be hungry any longer, so he decided to get some food in the house.

Karlsson's gaze immediately fell on n wooden cupboards, standing in the kitchen. He immediately realized that these cupboards have hidden jam stocks. Karlsson began to fly greedily around the kitchen, opening and closing the cupboards' doors, grab and empty all the jars of jam that he could find.

And now all jars of jam are empty, Karlsson has had enough and does not want to leave traces of his stay, so as not to let down his friend. Each of the cupboards has two doors: the left one and the right one. Karlsson remembers that when he rushed to the kitchen, all the cupboards' left doors were in the same position (open or closed), similarly, all the cupboards' right doors were in the same position (open or closed). Karlsson wants the doors to meet this condition as well by the time the family returns. Karlsson does not remember the position of all the left doors, also, he cannot remember the position of all the right doors. Therefore, it does not matter to him in what position will be all left or right doors. It is important to leave all the left doors in the same position, and all the right doors in the same position. For example, all the left doors may be closed, and all the right ones may be open.

Karlsson needs one second to open or close a door of a cupboard. He understands that he has very little time before the family returns, so he wants to know the minimum number of seconds t, in which he is able to bring all the cupboard doors in the required position.

Your task is to write a program that will determine the required number of seconds t.

Input

The first input line contains a single integer n — the number of cupboards in the kitchen ($2 \le n \le 10^4$). Then follow n lines, each containing two integers l_i and r_i ($0 \le l_i, r_i \le 1$). Number l_i equals one, if the left door of the i-th cupboard is opened, otherwise number l_i equals zero. Similarly, number r_i equals one, if the right door of the i-th cupboard is opened, otherwise number r_i equals zero.

The numbers in the lines are separated by single spaces.

Output

In the only output line print a single integer t — the minimum number of seconds Karlsson needs to change the doors of all cupboards to the position he needs.

Examples

input
5 0 1 1 0 0 1 1 1 0 1
output
3

→ **Attention**

Package for this problem was not updated by the problem writer or Codeforces administration after we've upgraded the judging servers. To adjust the time limit constraint, solution execution time will be multiplied by 2. For example, if your solution works for 400 ms on judging servers, then value 800 ms will be displayed and used to determine the verdict.

Codeforces Round #152 (Div. 2)

Finished

→ **Virtual participation**

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ACM-ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

→ **Problem tags**

implementation

No tag edit access

→ **Contest materials**

- Announcement

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