B: Major Choice

Your little sister freshly gratuaded from high-school, and she is wondering the same thing that we all once wondered ourselves: "shall I pursue the easy life of *Computer Science*, or tread the dark path of *Computer Engineering*?"

She looked up on Wikipedia the lists of subjects that characterize these two courses the most. She gathered two lists: the first one is a list of *some of the subjects* that are commonly found in a Computer Science (CS) course, and the other is a list of *some of the subjects* that are commonly found in a Computer Engineering (CE) course. For example:

- CS = {*Programmazione*, *Analisi 1*, *Basi di dati*}
- CE = {*Fisica 1*, *Elettrotecnica*}

After Wikipedia, she looked up some Italian universities' websites, using a bash script to automatically download more lists, each one related to either a CE or CS course. For example, let's say that she downloaded two more lists:

- LIST1 = {*Elettrotecnica*, *Ingegneria del software*, *Fisica 1*, *Analisi 2*}
- LIST2 = {*Basi di dati*, *Analisi 2*, *Statistica*, *Programmazione*}

The bash script she used to gather those additional lists didn't keep track of which course (CS or CE) each list referred to, so your sister is now wondering: given that each of these lists refers to **either CS or CE**, what is the **minimum number of subjects** that, in Italy, are **common to both courses**?

In the example above there are many possible interpretations, but the interpretation with the **minimal number** of common courses between CE and CS is when *Analisi 2* is the one and only common course.

Input

The first line of the input contains an integer N, the total number of lists that your sister gathered from the Internet, including the Wikipedia ones and the ones from the universities' websites.

The following N lines are like this:

- The first two lines are respectively the "commong CS courses" and "common CE courses" lists.
- Each of the following $N - 2$ lists refer to either a CS or a CE course.

Every list is a space separated set of strings.

Output

You should output a single integer: the minimum number of courses that are common in Italy to both CS and CE courses.

Constraints

- $2 \leq N \leq 250$.
- The first 2 lists will contain up to 1000 subjects each.
- The additional $N - 2$ lists will contain up to 10 subjects each.
- Each subject is a string of up to 10 lowercase 'a'-'z' characters without spaces.

Scoring

Your program will be tested against several testcases, and will be considered **correct** only if it will solve all of them correctly.

Examples

input	output
4 progr anauno basidati fisiuno elettr elettr ingsw fisiuno anadue basidati anadue stat progr	1
4 a b c d e f g h i j a b c i j f g h d e	4

The **first example** is the one described in the problem statement, but with simplified subject names.