

Week1 - Loops and Iterative Brute Force

A. Team

2 seconds, 256 megabytes

One day three best friends Petya, Vasya and Tonya decided to form a team and take part in programming contests. Participants are usually offered several problems during programming contests. Long before the start the friends decided that they will implement a problem if at least two of them are sure about the solution. Otherwise, the friends won't write the problem's solution.

This contest offers n problems to the participants. For each problem we know, which friend is sure about the solution. Help the friends find the number of problems for which they will write a solution.

Input

The first input line contains a single integer n ($1 \leq n \leq 1000$) — the number of problems in the contest. Then n lines contain three integers each, each integer is either 0 or 1. If the first number in the line equals 1, then Petya is sure about the problem's solution, otherwise he isn't sure. The second number shows Vasya's view on the solution, the third number shows Tonya's view. The numbers on the lines are separated by spaces.

Output

Print a single integer — the number of problems the friends will implement on the contest.

input

```
3
1 1 0
1 1 1
1 0 0
```

output

```
2
```

input

```
2
1 0 0
0 1 1
```

output

```
1
```

In the first sample Petya and Vasya are sure that they know how to solve the first problem and all three of them know how to solve the second problem. That means that they will write solutions for these problems. Only Petya is sure about the solution for the third problem, but that isn't enough, so the friends won't take it.

In the second sample the friends will only implement the second problem, as Vasya and Tonya are sure about the solution.

B. Pangram

2 seconds, 256 megabytes

A word or a sentence in some language is called a *pangram* if all the characters of the alphabet of this language appear in it *at least once*. Pangrams are often used to demonstrate fonts in printing or test the output devices.

You are given a string consisting of lowercase and uppercase Latin letters. Check whether this string is a pangram. We say that the string contains a letter of the Latin alphabet if this letter occurs in the string in uppercase or lowercase.

Input

The first line contains a single integer n ($1 \leq n \leq 100$) — the number of characters in the string.

The second line contains the string. The string consists only of uppercase and lowercase Latin letters.

Output

Output "YES", if the string is a pangram and "NO" otherwise.

input

```
12
toosmallword
```

output

```
NO
```

input

```
35
TheQuickBrownFoxJumpsOverTheLazyDog
```

output

```
YES
```

C. System of Equations

2 seconds, 256 megabytes

Furik loves math lessons very much, so he doesn't attend them, unlike Rubik. But now Furik wants to get a good mark for math. For that Ms. Ivanova, his math teacher, gave him a new task. Furik solved the task immediately. Can you?

You are given a system of equations:

$$\begin{cases} a^2 + b = n \\ a + b^2 = m \end{cases}$$

You should count, how many there are pairs of integers (a, b) ($0 \leq a, b$) which satisfy the system.

Input

A single line contains two integers n, m ($1 \leq n, m \leq 1000$) — the parameters of the system. The numbers on the line are separated by a space.

Output

On a single line print the answer to the problem.

input

9 3

output

1

input

14 28

output

1

input

4 20

output

0

In the first sample the suitable pair is integers $(3, 0)$. In the second sample the suitable pair is integers $(3, 5)$. In the third sample there is no suitable pair.

D. Choosing Laptop

2 seconds, 256 megabytes

Vasya is choosing a laptop. The shop has n laptops to all tastes.

Vasya is interested in the following properties: processor speed, ram and hdd. Vasya is a programmer and not a gamer which is why he is not interested in all other properties.

If all three properties of a laptop are **strictly less** than those properties of some other laptop, then the first laptop is considered outdated by Vasya. Among all laptops Vasya does not consider outdated, he chooses the cheapest one.

There are very many laptops, which is why Vasya decided to write a program that chooses the suitable laptop. However, Vasya doesn't have his own laptop yet and he asks you to help him.

Input

The first line contains number n ($1 \leq n \leq 100$).

Then follow n lines. Each describes a laptop as $speed\ ram\ hdd\ cost$. Besides,

Problems - Codeforces

- $speed, ram, hdd$ and $cost$ are integers
- $1000 \leq speed \leq 4200$ is the processor's speed in megahertz
- $256 \leq ram \leq 4096$ the RAM volume in megabytes
- $1 \leq hdd \leq 500$ is the HDD in gigabytes
- $100 \leq cost \leq 1000$ is price in tugriks

All laptops have different prices.

Output

Print a single number — the number of a laptop Vasya will choose. The laptops are numbered with positive integers from 1 to n in the order in which they are given in the input data.

input

5
2100 512 150 200
2000 2048 240 350
2300 1024 200 320
2500 2048 80 300
2000 512 180 150

output

4

In the third sample Vasya considers the first and fifth laptops outdated as all of their properties cannot match those of the third laptop. The fourth one is the cheapest among the laptops that are left. Thus, Vasya chooses the fourth laptop.

E. IQ test

2 seconds, 256 megabytes

Bob is preparing to pass IQ test. The most frequent task in this test is to find out which one of the given n numbers differs from the others. Bob observed that one number usually differs from the others in evenness. Help Bob — to check his answers, he needs a program that among the given n numbers finds one that is different in evenness.

Input

The first line contains integer n ($3 \leq n \leq 100$) — amount of numbers in the task. The second line contains n space-separated natural numbers, not exceeding 100. It is guaranteed, that exactly one of these numbers differs from the others in evenness.

Output

Output index of number that differs from the others in evenness. Numbers are numbered from 1 in the input order.

input

5
2 4 7 8 10

output

3

input
4
1 2 1 1
output
2

F. Friends

1 second, 256 megabytes

One day Igor K. stopped programming and took up math. One late autumn evening he was sitting at a table reading a book and thinking about something.

The following statement caught his attention: "Among any six people there are either three pairwise acquainted people or three pairwise unacquainted people"

Igor just couldn't get why the required minimum is 6 people. "Well, that's the same for five people, too!" — he kept on repeating in his mind. — "Let's take, say, Max, Ilya, Vova — here, they all know each other! And now let's add Dima and Oleg to Vova — none of them is acquainted with each other! Now, that math is just rubbish!"

Igor K. took 5 friends of his and wrote down who of them is friends with whom. Now he wants to check whether it is true for the five people that among them there are either three pairwise acquainted or three pairwise not acquainted people.

Input

The first line contains an integer m ($0 \leq m \leq 10$), which is the number of relations of acquaintances among the five friends of Igor's.

Each of the following m lines contains two integers a_i and b_i ($1 \leq a_i, b_i \leq 5; a_i \neq b_i$), where (a_i, b_i) is a pair of acquainted people. It is guaranteed that each pair of the acquaintances is described exactly once. The acquaintance relation is symmetrical, i.e. if x is acquainted with y , then y is also acquainted with x .

Output

Print "FAIL", if among those five people there are no either three pairwise acquainted or three pairwise unacquainted people. Otherwise print "WIN".

input
4
1 3
2 3
1 4
5 3
output
WIN

input
5
1 2
2 3
3 4
4 5
5 1
output
FAIL