Problem A. 75132. Attraction

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	256 megabytes

Temirulan works at an attraction nearby park. Right now n people are arranged in a queue waiting for their turn to use the attraction.

The attraction is specifically designed, so it puts a limit on the heights of people that can use the attraction, meaning that all people that are not tall enough cannot use it. Temirulan has to estimate electricity resources that the attraction needs, so he worries how many people fit into this height limitation.

Given height limitation for the attraction and heights of people that want to enjoy it, can you count the number of people that fit into the height limitation?

Input

The first line of input contains a single number n — the number of people that are arranged in a queue ($1 \leq n \leq 1000$).

The second line of input contains n space-separated numbers $h_1, h_2, ..., h_n$ — the heights of people that want to use the attraction ($130 \leq h_i \leq 210$).

The third line of input contains a single number H — the limitation on the height of people that can use the attraction, meaning that any person, whose height is strictly less than H is not allowed to use the attraction ($130 \leq H \leq 210$).

Output

Output a single number — the number of people from the given list that are allowed to use the attraction.

Examples

standard input	standard output
5 150 180 167 174 162 160	4
3 170 174 178 175	1

Problem B. 75131. Booklover

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	256 megabytes

Aida loves reading technical books. This time she has got a book called *Competitive Programming*, which has n pages to read. Currently, her abilities allow her to read k pages of technical literature within a day.

How many days does it take Aida to finish the book?

Input

The first line of input contains two space-separated integers n k — the number of pages in *Competitive Programming* and the number of pages Aida reads in a day ($1 \le n \le 1000, 1 \le k \le 200$).

Output

Output a single number — the numbers of days required to finish the book.

Examples

standard input	standard output
300 40	8
450 150	3

Note

In the first example, she reads 280 pages in 7 days and other 20 left pages in one day.

Problem C. 73313. Exchange

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	256 megabytes

Aidana has accounts in n banks. In bank i she has a_i dollars. All of her bank accounts store money in dollars. Given the exchange rate k for today, can you calculate how many tenge she has in each of her bank accounts?

Exchange rate means cost of 1 dollar in tenge.

Input

The first line of input contains a single number n — the number of Aidana's bank accounts. ($1 \le n \le 1000$).

The second line contains n space-separated integers $a_1, a_2, ..., a_n$ — given array of amounts of dollars in her bank accounts ($0 \le a_i \le 1000$).

The third line of input contains a single number d — the exchange rate for today ($1 \le d \le 1000$).

Output

Output n space-separated integers — an array of amounts of tenge in her bank accounts.

Example

standard input	standard output
5 1 4 3 1 7 360	360 1440 1080 360 2520

Problem D.

Input file:	`standard input`
Output file:	`standard output`
Time limit:	2 seconds
Memory limit:	64 megabytes

You are given 4 number. Check if it is "readable"message. "Readable"means that each number is the ASCII code of some english letter (upper case or lower).

Input

4 integer numbers.

Output

If there is no readable message print "NO otherwise - "YES".

Examples

standard input	standard output
70 80 90 100	YES
12 150 34 1	NO
90 1 2 3	NO

Problem E. 73369. Equation

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	256 megabytes

Solve the following equation:

$$ax - b = cx + d$$

It is guaranteed that the equation has exactly one integer value solution with given parameters.

Input

In a single line given four space-separated integers a b c d — parameters from the above equation ($-1000 \le a, b, c, d \le 1000$).

Output

Output x — solution to the equation.

Example

standard input	standard output
2 1 1 1	2

Problem F.

Input file:	`standard input`
Output file:	`standard output`
Time limit:	2 seconds
Memory limit:	64 megabytes

You are given one integer number N. Print out the sum of first and last digit of this number

Input

One integer number N ($1000 \leq N \leq 9999$)

Output

Print out sum of first and last digit

Example

standard input	standard output
1234	5

Problem G. 74755. Compression

Input file:	standard input
Output file:	standard output
Time limit:	1 second
Memory limit:	256 megabytes

Ayan has recently discovered an operation called *compression* that is used with strings. This operation takes a string and leaves only the first occurrences of letters that are present in the string and deletes all the other later occurrences.

For example, if we apply *compression* on a string «ACABACA», after the operation we will get «ACB» because we delete all the last three «A»-s and the second «C» by leaving only unique letters.

Given a string s, Ayan asks you to find the result of applying *compression* on s.

Input

The first line of input contains a single string s containing only uppercase English letters ($1 \leq |s| \leq 1000$).

Output

Output a single string — the result of applying *compression* on s.

Examples

standard input	standard output
ACABACA	ACB
ABCABCDABCDEABCDEF	ABCDEF
INTERNALIZATION	INTERALZO
KHABIB	KHABI

Note

Attention you can not use the sorting function and unique.

Problem H. Half one matrix

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	256 megabytes

Given number n - size of a matrix. Then given a matrix. You need to change all numbers that are on a main diagonal and above it to one.

Input

The first line of input - number n ($1 \leq n, m \leq 100$) size of a matrix. The next lines - matrix.

Output

Matrix, which numbers on a main diagonal and above it are all ones.

Examples

standard input	standard output
3 1 2 3 4 5 6 7 8 9	1 1 1 4 1 1 7 8 1
2 0 0 0 0	1 1 0 1

Problem I. Row of zeros

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	256 megabytes

Given two numbers n and m - size of a matrix. Then given a matrix. You need to find amount of zero rows.

Input

The first line of input - two numbers nxm ($1 \leq n, m \leq 100$) size of a matrix. The next lines - matrix.

Output

Number of zero rows.

Examples

standard input	standard output
3 4 1 1 1 1 2 2 2 2 0 0 0 0	1
2 2 1 1 2 2	0

Problem J. Long gaps

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	256 megabytes

Kymbat loves donuts very much. But she can buy them only if the break between classes is 3 or more. Given an array where every number with even index represents the time when lesson starts. And every next number represents the time when lesson ends. Find how many times Kymbat will buy donuts during the day.

Input

The first line of input contains integer n (even number) - size of the array ($2 \leq n \leq 30$).

The second line contains sorted elements of the array.

Output

Print solution for this problem.

Examples

standard input	standard output
4 1 2 10 30	1
2 1 4	0
8 3 4 7 8 12 13 17 19	3

Problem K. Good, very good, best

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	256 megabytes

You are given a three-digit number. If it's second digit is divisible by 2, this number is good. If it's second digit is divisible by 3, this number is very good. If it's second digit is divisible by 2 and 3, this number is the best. Otherwise it is none.

Input

The input contains three-digit number.

Output

Find, whether it is none, good, very good or best.

Examples

standard input	standard output
264	Best
894	Very good
206	None
242	Good

Problem L. Common characters

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	256 megabytes

You are given a list of strings `A`. Print all characters that appears in all strings

Input

In the first line given `n` - number of strings.

In the next `n` lines given elements of array.

Output

Print all single common characters, if there are no common characters print NO COMMON CHARACTERS

Examples

standard input	standard output
3 bella label roller	e l
4 alik diyas ali dayana	a
3 aab ab c	NO COMMON CHARACTERS

Problem M. Unique array

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	256 megabytes

You are given an array with size - `N`.

Your task is - to determine the uniqueness of an array.

Input

In the first line given `N` - the size of the array.

In the next line given elements.

Output

Print YES if the given array contains only unique elements, otherwise print NO.

Examples

standard input	standard output
7 2 4 3 -1 7 12 -4	YES
5 5 2 -3 2 1	NO

Note

Use STL container - set.

Problem N. ZA WARUDO TOKI WO TOMARE

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	256 megabytes

DIO is fighting with JOJO. DIO wants to cast time stop, but for this DIO needs to find at least one palindrome in given string `s` by permutations of letters, help DIO, is he can cast ZA WARUDO TOKI WO TOMARE.

Input

You are given single string `s`.

Output

Print ZA WARUDO TOKI WO TOMARE, if given string could be palindrome permutation, otherwise print JOJO

Examples

standard input	standard output
jojo	ZA WARUDO TOKI WO TOMARE
jojorefer	ZA WARUDO TOKI WO TOMARE
aabc	JOJO
asdasd	ZA WARUDO TOKI WO TOMARE

Note

jojo possible palindrome -> jooj

jojorefer possible palindrome -> ejorfroje

Problem O. 77895.OP

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	256 megabytes

Given a sequence t of numbers and your task is to find two sequences a and b using recursion : a[i] = t[i] OR(t[i] + 1); b[i] = t[i] AND(t[i] + 1)

Input

In the first line given ($1 \leq n \leq 10000$). In the second line given n integer numbers.

Output

In the first line print a sequence. In the second line print b sequence.

Examples

standard input	standard output
3 1 2 3	3 3 7 0 2 0
4 0 0 1 4	1 1 3 5 0 0 0 4