Problem A. 73931. Is it alphabet?

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

Alikhan loves playing with strings. This time he has generated some string of size 26. Now he wants to know if the given string is shuffled form of the English alphabet? More formally, does every letter of English alphabet appear in the given string exactly once?

Input

First line of input contains one string with length 26.

Output

If the given string is shuffled form of English alphabet, print «Yes» (without quotes). Otherwise, print «No» (without quotes).

Examples

standard input	standard output
azbcdefghijklmnopqrstuvwxy	Yes
abcdefghijklmnopqrstuvwxyt	No

Problem B. 75139. Good rectangle

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

You are given a rectangle with sides a and b. Your task is to determine whether the given rectangle is *good* or not.

We call a rectangle *good* if and only if its perimeter is strictly greater than its area.

Input

A single line contains two space-separated integers a and b — sides of the given rectangle ($1 \le a, b \le 10$).

Output

If the given rectangle is *good*, print «Yes» (without quotes).

Otherwise, print «No» (without quotes).

Examples

standard input	standard output
2 3	Yes
6 8	No

Note

In the first example, the perimeter is $2 * (2 + 3) = 10$ and the area is $2 * 3 = 6$. The rectangle is *good*, because $10 > 6$.

Problem C. 75462. Modular addition

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

In this problem, you are given three integers a, b and x. Your task is to write a function that calculates $a + b$ and returns a remainder after dividing this sum by x.

Your code might look as follows:

```
int modadd(int a, int b, int x) {
    // your code that calculates a + b and
    // returns a remainder after dividing it by x
}
```

Note. All the accepted solutions for this problem will be rechecked by assistants.

Input

The first line of input contains three space-separated integers a, b and x ($1 \le a, b \le 1000, 1 \le x \le 100$).

Output

Output a single number — a remainder of dividing $a + b$ by x.

Examples

standard input	standard output
20 20 30	10
30 40 100	70
5 17 22	0
1 6 2	1

Problem D. 73511. Quarters

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

In this task, you have to generate a two-dimensional array of n rows and m columns in the following way.

Let's pass two lines through our two-dimensional array horizontally and vertically, both cutting the array in the middle. Formally, these are the horizontal line after $\frac{n}{2}$-th row and the vertical line after $\frac{m}{2}$-th column (n and m are even).

Now we have four parts of the array: right-upper quarter, left-upper quarter, left-lower quarter and right-lower quarter. Fill the right-upper quarter with 0-s, the left-upper quarter with 1-s, the left-lower quarter with 2-s, the right-lower quarter with 3-s. For clearance, see the examples below.

Input

The first line of input contains two-separated positive even integers n and m — the number of rows and columns respectively ($2 \le n, m \le 100$).

Output

Output n lines each containing m space-separated integers — the generated array with each cell having the number of corresponding quarter.

Examples

standard input	standard output
4 6	1 1 1 0 0 0 1 1 1 0 0 0 2 2 2 3 3 3 2 2 2 3 3 3
2 6	1 1 1 0 0 0 2 2 2 3 3 3
8 8	1 1 1 1 0 0 0 0 1 1 1 1 0 0 0 0 1 1 1 1 0 0 0 0 1 1 1 1 0 0 0 0 2 2 2 2 3 3 3 3 2 2 2 2 3 3 3 3 2 2 2 2 3 3 3 3 2 2 2 2 3 3 3 3
4 2	1 0 1 0 2 3 2 3

Problem E. 73382. Borrower

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

Oma has got in trouble this month. He owes to a bank y tenge, but he has only x tenge ($x \leq y$). But he does not worry much, because he has n friends, whom Oma can ask to borrow some money. Friend i stated that he can borrow a_i tenge.

Oma is a bit shy, and instead of asking many friends, he will ask exactly one of his friends for a help.

He wonders how many friends are able to help him in order to pay off a bank, considering that he already has x tenge?

Input

The first line of input contains three space-separated integers n x y — the number of Oma's friends, money that he already has and money that he owes to the bank ($1 \leq n, x, y \leq 1000, x \leq y$).

The second line contains n space-separated integers $a_1, a_2, ..., a_n$ — money that he can borrow from his friends.

Output

Output single integer — the number of Oma's friends that can help him to pay off the bank.

Example

standard input	standard output
5 100 300 100 200 100 300 400	3

Note

In the above example, he has to pay off 300 tenge, but he has only 100 tenge. Thus, he needs at least 200 tenge from one of his friends.

None of his friends with 100 tenge can help him. Other three friends with 200, 300, 400 tenge can help him. So the answer is 3.

Problem F. 73154. Trailing zeros

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

In this problem, you are given 8-bit number x. Find the number of trailing zeros in its binary representation. Trailing zeros are the ones that we encounter **until the first 1-bit** if we traverse the binary representation from right to left.

For example, the binary representation of the number 96 is **01100000**. Number of 0-bits until the first 1-bit is 5 (considering that we traverse the binary representation from right to left).

Input

The first line of input contains a single number x — 8-bit number ($1 \leq x < 2^8$).

Output

Output a single number — the number of trailing 0-bits in the binary representation of x.

Examples

standard input	standard output
96	5
2	1
12	2
3	0