

Module 6.5:Week 02 Practice Day 01

(Codeforces Links)

<https://codeforces.com/group/MWSDmqGsZm/contest/326175/problem/C>

C. Next Alphabet

Given a lowercase alphabet character. You have to print the next character in the alphabet.

Input

Only one line containing a lowercase English letter C.

Output

Print the next letter to C in the alphabet.

Example

input

a

output

b

Note

The next letter to **z** is **a**.

<https://codeforces.com/group/MWSDmqGsZm/contest/326175/problem/D>

D. Ali Baba and Puzzles

One day, Ali Baba had an easy puzzle that he couldn't solve. The puzzle consisted of 44 numbers and his task was to check whether he could get the fourth number using arithmetic operators (+, -, ×, ÷, %) between the other three numbers; so that each operator is used **only once**.

$$a \square b \square c = d$$

Can you solve this tricky puzzle for him?

Input

Only one line containing four numbers a, b, c, and d ($-10^9 \leq a, b, c \leq 10^9$), ($-10^{18} \leq d \leq 10^{18}$).

Output

Print "YES" (without quotes) if you get the fourth number using arithmetic operators, otherwise, print "NO" (without quotes).

Examples

input

3 4 5 23

output

YES

input

9 5 3 7

output

YES

input

1 2 3 1

output

NO

<https://codeforces.com/group/MWSDmqGsZm/contest/219432/problem/K>

K. Divisors

Given a number N . Print all the **divisors** of N in ascending order.

Input

Only one line containing a number N ($1 \leq N \leq 10^4$).

Output

Print all **positive divisors** of N , one number per line.

Examples

input

6

output

1

2

3

6

input

7

output

1

7

input

4

output

1

2

4

Note

Divisor of Number is A number that divides the integer exactly (no remainder).

In other words the division works perfectly with no fractions or remainders involved.

Examples:

- **3** is a divisor of **12**, because $12 \div 3 = 4$ exactly
- **4** is a divisor of **12**, because $12 \div 4 = 3$ exactly.
- **5** is not a divisor of **12**, because $12 \div 5 = 2$ with a remainder of 2.

a divisor is also a factor of the original integer.

<https://codeforces.com/group/MWSDmqGsZm/contest/326907/problem/A>

A. Timon and Pumbaa

Timon has a candies and his friend, Pumbaa, has b candies, so Pumbaa asked Timon to tell him the value of $a-b$. However, Timon will tell him the value of $a-b$ if the value is ≥ 0 ; otherwise, he will lie and say 0 . Since it was a hard task for Timon, he's asking for your help.

Given two numbers a and b , find the answer.

Input

Only one line containing two numbers a, b ($1 \leq a, b \leq 10^9$).

Output

Print the answer as specified in the statement.

Examples

input

9 1

output

8

input

1 9

output

0

<https://codeforces.com/group/MWSDmqGsZm/contest/326175/problem/I>

I. Lucky Numbers

A number of two digits is lucky if **one of its digits is divisible by the other**.

For example, 39, 82, and 55 are lucky, while 79 and 43 are not.

Given a number between 10 and 99, determine whether it is lucky or not.

Input

Only one line containing a single number N ($10 \leq N \leq 99$).

Output

Print "YES" if the given number is lucky, otherwise print "NO".

Examples

input

39

output

YES

input

64

output

NO

<https://codeforces.com/group/MWSDmqGsZm/contest/326175/problem/G>

G. Katryoshka

The Egyptian football team will be in Russia for the World Cup. Of course, they all would like to buy souvenirs for their families. Luckily, they met the king of souvenirs Matryoshka who is famous for his masterpiece Katryoshka. He makes it using different wooden pieces: **eyes**, **mouths** and **bodies**. He can form a nice Katryoshka using one of the following combinations:

1. Two eyes and one body.

2. Two eyes, one mouth, and one body.
3. One eye, one mouth, and one body.

If the king has n eyes, m mouths and k bodies, what is the largest number of Katryoshkas he can make?

Input

Only one line containing three numbers n , m and k ($0 \leq n, m, k \leq 10^{18}$) – the number of eyes, mouths and bodies respectively.

Output

Print the largest number of Katryoshkas he can make.

Examples

input

```
1 2 3
```

output

```
1
```

input

```
0 11 2
```

output

Copy

```
0
```

input

```
90 24 89
```

output

```
57
```