A. Winter Sale

time limit per test: 1 second❓
memory limit per test: 256 megabytes

The winter sale began, and Mrs. Sarah wants to buy a T-shirt for her son. The T-shirt has a ticket that indicates a discount of $X\%$ and its price P after the discount. She now wants to know the price before the discount to know if the discount was worthy. Help her!

Input

Only one line containing two numbers X and P ($1 \leq X \leq 99, 1 \leq P \leq 4 \times 10^4$) – the discount percentage, and the price of the T-shirt after the discount.

Output

Print the price of the T-shirt before the discount rounded up to **two decimal places**.

Examples

input	Copy
20 80	

output	Copy
100.00	

input	Copy
15 20	

output	Copy
23.53	

B. Memo and Momo

time limit per test: 1 second❓
memory limit per test: 256 megabytes

Memo and Momo are playing a game. Memo will choose a positive number a, and Momo will choose a positive number b.

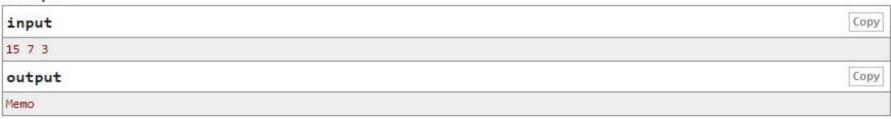Your task is to tell them who will win according to the following rules:

- If both a and b are divisible by k, both of them win and you should print "Both".
- If a is divisible by k but b isn't, Memo wins and you should print "Memo".
- If b is divisible by k but a isn't, Momo wins and you should print "Momo".
- If both a and b are not divisible by k, no one wins and you should print "No One".
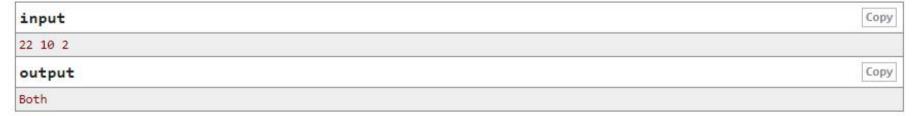
Input

Only one line containing three positive numbers a, b and k ($1 \le a, b, k \le 10^{18}$).

Output

Print the answer as described in the statement.

Examples

input		Copy
15 7 3		
output		Copy
Memo		

input		Copy
22 10 2		
output		Copy
Both		

C. Next Alphabet

time limit per test: 1 second❷
memory limit per test: 256 megabytes

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	Copy
a	

output	Copy
b	

Note

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

D. Ali Baba and Puzzles

time limit per test: 1 second⊕
memory limit per test: 256 megabytes

One day, Ali Baba had an easy puzzle that he couldn't solve. The puzzle consisted of 4 numbers and his task was to check whether he could get the fourth number using arithmetic operators $(+, -, \times)$ between the other three numbers; so that each operator is used **only** once.
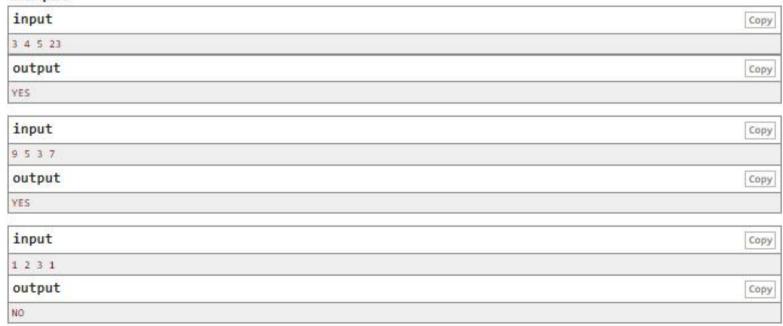
$$a\square b\square c = d$$

Can you solve this tricky puzzle for him?

Input

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

Output

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

Examples

input	Copy
3 4 5 23	

output	Copy
YES	

input	Copy
9 5 3 7	

output	Copy
YES	

input	Copy
1 2 3 1	

output	Copy
NO	

E. Interval Sweep

time limit per test: 1 second❷
memory limit per test: 256 megabytes

Given two numbers a and b. You have to answer with "YES" if there is a **non-empty interval** consisting of numbers from l to r (
$l, l+1, l+2, \ldots, r$) with a odd numbers and b even numbers, or "NO" otherwise.

Input

Only one line containing two numbers a and b ($0 \le a, b \le 100$)the number of odd numbers and the number of even numbers in the interval respectively.

Output

Print "YES" or "NO" as described in the statement.

Examples

input	
2 3	Copy
output	Copy
YES	

input	
3 1	Copy
output	Copy
NO	

Note

Example 1 :

some valid intervales that contain 2 odd numbers and 3 even numbers can be

$l = 6, r = 10$ contains numbers $(6, 7, 8, 9, 10)$.

$l = 14, r = 18$ contains numbers $(14, 15, 16, 17, 18)$.

F. Adding Bits

time limit per test: 1 second❓
memory limit per test: 256 megabytes

Peter Parker had worked hard throughout his digital logic course, but when he was asked to implement a 32 bit adder for a machine, he made a mistake in the design part. After tracing the design for half an hour, he found his flaw!! He was doing bitwise addition, but the carry bit is always zero.

$4 = 00000000\ 00000000\ 00000000\ 00000100$

$+$

$6 = 00000000\ 00000000\ 00000000\ 00000110$

$=$

$2 = 00000000\ 00000000\ 00000000\ 00000010$

Now, he has to write an efficient program that would take 2 unsigned 32 bit decimal numbers as input, and reproduce the output by adding them in the same way as his circuit does.

Input

Only One line containing two decimal numbers A and B ($0 \le A, B \le 10^9$).

Output

Print the value after adding A and B in Peter Parker's way.

Examples

input	Copy
4 6	

output	Copy
2	

input	Copy
6 9	

output	Copy
15	

G. Katryoshka

time limit per test: 1 second⊘
memory limit per test: 256 megabytes

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	Copy
1 2 3	
output	Copy
1	

input	Copy
0 11 2	
output	Copy
0	

input	Copy
90 24 89	
output	Copy
57	

H. Data Type Guessing

time limit per test: 1 second❓
memory limit per test: 256 megabytes

Given three numbers n, k and a. Identify whether the data type of $\frac{n \times k}{a}$ is int, long long or double.

Input

Only one line containing three numbers n, k and a ($1 \leq a, k, n \leq 2147483647$).

Output

Print "int", "long long" or "double" (without quotes) as described in the statement.

Examples

input	Copy
3 6 9	

output	Copy
int	

input	Copy
100000 200000 4	

output	Copy
long long	

Note

double is when a number has a floating-point.

int Range: $[-2147483648, 2147483647]$.

long long can hold values of a bigger range than that of int.

I. Lucky Numbers

time limit per test: 1 second⊙
memory limit per test: 256 megabytes

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	Copy
39	
output	Copy
YES	

input	Copy
64	
output	Copy
NO	