Bigger is Greater

Please note that this is a team event, and your submission will be accepted only as a part of a team, even single member teams are allowed. Please click here to register as a team, if you have NOT already registered.

Given a word w, rearrange the letters of w to construct another word s in such a way that, s is lexicographically greater than w.

Input Format
The first line of input contains t, number of test cases. Each of the next t lines contains w.

Constraints
$1 \leq t \leq 10^5$
$1 \leq |w| \leq 100$
w will contain only lower case english letters and its' length will not exceed 100.

Output Format
For each testcase, output a string lexicographically bigger than w in a separate line. In case of multiple possible answers, print the lexicographically smallest one and if no answer exists, print `no answer`.

Sample Input

```
3
ab
bb
hefg
```

Sample Output

```
ba
no answer
hegf
```

Explanation

Testcase 1 : There exists only one string greater than `ab` which can be built by rearranging `ab`. That is `ba`.
Testcase 2 : Not possible to re arrange `bb` and get a lexicographically greater string.
Testcase 3 : `hegf` is the next string (lexicographically greater) to `hefg`.

Filling Jars

Animesh has N empty candy jars, numbered from 1 to N, with infinite capacity. He performs M operations. Each operation is described by 3 integers a, b and k. Here, a and b are indices of the jars, and k is the number of candies to be added inside each jar whose index lies between a and b (both inclusive). Can you tell the average number of candies after M operations?

Input Format

The first line contains two integers N and M separated by a single space.
M lines follow. Each of the M lines contain three integers a, b and k separated by single space.

Output Format

A single line containing the average number of candies across N jars, *rounded down* to the nearest integer.

Note

Rounded down means finding the greatest integer which is less than or equal to given number. Eg, *13.65* and *13.23* is rounded down to *13*, while *12.98* is rounded down to *12*.

Constraints

$3 <= N <= 10^7$
$1 <= M <= 10^5$
$1 <= a <= b <= N$
$0 <= k <= 10^6$

Sample Input #00

```
5 3
1 2 100
2 5 100
3 4 100
```

Sample Output #00

```
160
```

Explanation

Initially each of the jar contains 0 candies

```
0 0 0 0 0
```

First operation

```
100 100 0 0 0
```

Second operation

```
100 200 100 100 100
```

Third operation

```
100 200 200 200 100
```

Total = 800, Average = 800/5 = 160

Find Digits

Problem Statement

You are given a number *N*, you need to print the number of positions where digits exactly divides *N*.

Input format

The first line contains T (number of test cases followed by T lines each containing N).

Constraints

$1 <= T <= 15$

$0 < N < 10^{10}$

Output Format

For each test case print the number of positions in *N* where digits in that number exactly divides the number *N* in separate line.

Input

```
1
12
```

Output

```
2
```

Explanation

2 digits in the number 12 divide the number exactly. Digits at ten's place, *1*, divides 12 exactly in 12 parts, and digit at one's place, *2* divides 12 equally in 6 parts.

This challenge was a part of Pragyan 12

Gem Stones

John has discovered various rocks. Each rock is composed of various elements, and each element is represented by a lowercase latin letter from 'a' to 'z'. An element can be present multiple times in a rock. An element is called a 'gem-element' if it occurs at least once in each of the rocks.

Given the list of **N** rocks with their compositions, display the number of gem-elements that exist in those rocks.

Input Format
The first line consists of **N**, the number of rocks.
Each of the next **N** lines contain rocks' composition. Each composition consists of lowercase letters of English alphabet.

Output Format
Print the number of gem-elements that are common in these rocks. If there are none, print 0.

Constraints
$1 \leq N \leq 100$
Each composition consists of only small latin letters ('a'-'z').
$1 \leq$ Length of each composition ≤ 100

Sample Input

```
3
abcdde
baccd
eeabg
```

Sample Output

```
2
```

Explanation
Only "a", "b" are the two kind of gem-elements, since these are the only characters that occur in each of the rocks' composition.

Is Fibo

You are given an integer, N. Write a program to determine if N is an element of the *Fibonacci Sequence*.

The first few elements of fibonacci sequence are 0,1,1,2,3,5,8,13.... A fibonacci sequence is one where every element is a sum of the previous two elements in the sequence. The first two elements are 0 and 1.

Formally:

$fib_0 = 0$
$fib_1 = 1$
$fib_n = fib_{n-1} + fib_{n-2} \forall\ n > 1$

Input Format
The first line contains T, number of test cases.
T lines follows. Each line contains an integer N.

Output Format
Display `IsFibo` if N is a fibonacci number and `IsNotFibo` if it is not a fibonacci number. The output for each test case should be displayed on a new line.

Constraints
$1 <= T <= 10^5$
$1 <= N <= 10^{10}$

Sample Input

```
3
5
7
8
```

Sample Output

```
IsFibo
IsNotFibo
IsFibo
```

Explanation
5 is a Fibonacci number given by $fib_5 = 3 + 2$
7 is not a Fibonacci number
8 is a Fibonacci number given by $fib_6 = 5 + 3$

TimeLimit Time limit for this challenge is given here