

D. Polycarp and Div 3

time limit per test

3 seconds

memory limit per test

256 megabytes

input

standard input

output

standard output

Polycarp likes numbers that are divisible by 3.

He has a huge number S . Polycarp wants to cut from it the maximum number of numbers that are divisible by 3. To do this, he makes an arbitrary number of vertical cuts between pairs of adjacent digits. As a result, after m such cuts, there will be $m+1$ parts in total. Polycarp analyzes each of the obtained numbers and finds the number of those that are divisible by 3. For example, if the original number is $S=3121$, then Polycarp can cut it into three parts with two cuts: $3|1|21$. As a result, he will get two numbers that are divisible by 3.

Polycarp can make an arbitrary number of vertical cuts, where each cut is made between a pair of adjacent digits. The resulting numbers cannot contain extra leading zeroes (that is, the number can begin with 0 if and only if this number is exactly one character '0'). For example, 007, 01 and 00099 are not valid numbers, but 90, 0 and 10001 are valid.

What is the maximum number of numbers divisible by 3 that Polycarp can obtain?

Input

The first line of the input contains a positive integer S . The number of digits of the number S is between 1 and $2 \cdot 10^5$, inclusive. The first (leftmost) digit is not equal to 0.

Output

Print the maximum number of numbers divisible by 3 that Polycarp can get by making vertical cuts in the given number S .

Examples

input

Copy

3121

output

Copy

2

input

Copy

6

output

Copy

1

input

Copy

output

output

Note

In the fourth example, an example set of optimal cuts is $2|0|1|9|201|81$. The numbers 0, 9, 201 and 81 are divisible by 3.