

## C. K-Dominant Character

time limit per test: 2 seconds  
memory limit per test: 256 megabytes  
input: standard input  
output: standard output

You are given a string  $s$  consisting of lowercase Latin letters. Character  $c$  is called  $k$ -dominant iff each substring of  $s$  with length at least  $k$  contains this character  $c$ .

You have to find minimum  $k$  such that there exists at least one  $k$ -dominant character.

### Input

The first line contains string  $s$  consisting of lowercase Latin letters ( $1 \leq |s| \leq 100000$ ).

### Output

Print one number — the minimum value of  $k$  such that there exists at least one  $k$ -dominant character.

### Examples

input
abacaba
output
2

input
zzzzz
output
1

input
abcde
output
3