

## Problem B. Escape Sequences

Input file: *standard input*  
Output file: *standard output*  
Time limit: 1 second  
Memory limit: 512 mebibytes

For a string  $s$  consisting of only “ $a$ ” and “ $b$ ”, let  $f(s)$  be the string obtained by replacing all “ $a$ ” in  $s$  with “ $aa$ ” and “ $b$ ” with “ $ab$ ”. For example,  $f(\text{“aba”}) = \text{“aaabaa”}$ .

Given strings  $s$  and  $t$ , determine the smallest non-negative integer  $k$  where  $t$  is a consecutive substring of  $f^k(s)$ .

Note that  $f^k$  is defined by:

- $f^0(s) = s$ ;
- $f^k(s) = f^{k-1}(f(s))$ .

### Input

The first and second lines contain string  $s$  and  $t$  respectively ( $1 \leq |s|, |t| \leq 2 \cdot 10^5$ ).

Strings  $s$  and  $t$  consist of only characters “ $a$ ” and “ $b$ ”.

### Output

A single integer denotes the minimum  $k$ .

If  $k$  does not exist, print “-1” instead.

### Examples

standard input	standard output
b ab	1
ababa bab	0
a b	-1