# A. Message

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

Dr. Moriarty is about to send a message to Sherlock Holmes. He has a string $s$.

String $p$ is called a *substring* of string $s$ if you can read it starting from some position in the string $s$. For example, string "aba" has six substrings: "a", "b", "a", "ab", "ba", "aba".

Dr. Moriarty plans to take string $s$ and cut out some substring from it, let's call it $t$. Then he needs to change the substring $t$ zero or more times. As a result, he should obtain a fixed string $u$ (which is the string that should be sent to Sherlock Holmes). One change is defined as making one of the following actions:

- Insert one letter to any end of the string.
- Delete one letter from any end of the string.
- Change one letter into any other one.

Moriarty is very smart and after he chooses some substring $t$, he always makes the minimal number of changes to obtain $u$.

Help Moriarty choose the best substring $t$ from all substrings of the string $s$. The substring $t$ should minimize the number of changes Moriarty should make to obtain the string $u$ from it.

## Input

The first line contains a non-empty string $s$, consisting of lowercase Latin letters. The second line contains a non-empty string $u$, consisting of lowercase Latin letters. The lengths of both strings are in the range from $1$ to $2000$, inclusive.

## Output

Print the only integer — the minimum number of changes that Dr. Moriarty has to make with the string that you choose.

### Examples

| input |
| --- |
| aaaaa<br>aaa |
| **output** |
| 0 |

| input |
| --- |
| abcabc<br>bcd |
| **output** |
| 1 |

| input |
| --- |
| abcdef<br>klmnopq |
| **output** |
| 7 |

## Note

In the first sample Moriarty can take any substring of length $3$, and it will be equal to the required message $u$, so Moriarty won't have to make any changes.

In the second sample you should take a substring consisting of characters from second to fourth ("bca") or from fifth to sixth ("bc"). Then you will only have to make one change: to change or to add the last character.

In the third sample the initial string $s$ doesn't contain any character that the message should contain, so, whatever string you choose, you will have to make at least $7$ changes to obtain the required message.