

Problem H. Edit Distance

Time Limit 1000 ms

Mem Limit 524288 kB

The *edit distance* between two strings is the minimum number of operations required to transform one string into the other.

The allowed operations are:

- Add one character to the string.
- Remove one character from the string.
- Replace one character in the string.

For example, the edit distance between LOVE and MOVIE is 2, because you can first replace L with M, and then add I.

Your task is to calculate the edit distance between two strings.

Input

The first input line has a string that contains n characters between A–Z.

The second input line has a string that contains m characters between A–Z.

Output

Print one integer: the edit distance between the strings.

Constraints

- $1 \leq n, m \leq 5000$

Example

Input	Output
LOVE MOVIE	2