Edit Distance

Problem Description

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 $(1 \leq n \leq 5000)$ characters between A–Z. The second input line has a string that contains m $(1 \leq m \leq 5000)$ characters between A–Z.

Output

Print one integer: the edit distance between the strings.

Samples

Sample Input 1
LOVE
MOVIE

Sample Output 1
2