

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:

LOVE

MOVIE

Output:

2