

# Catching Cheaters

Time Limit: 2 seconds

Memory Limit: 256 MB

## Problem Statement

After cheating incidences on Dec Course 2020 Day 1 contest, Codebreaker admins are very angry. They wish to code a plagiarism checker to stop people blatantly copying code.

For two codes (represented as lowercase alphabet strings)  $C$  and  $D$ , we define their *similarity* as  $4 \times LCS(C, D) - |C| - |D|$ , where  $LCS(C, D)$  represents the length of the longest common **subsequence** of  $C$  and  $D$ .

As some known cheaters are very smart, they will only copy some parts of their code. Thus, the plagiarism checker should check for the maximum similarity over all pairs  $C$  and  $D$  such that  $C$  and  $D$  are **substrings** of  $A$  and  $B$  respectively.

Help Codebreaker admins to code this plagiarism checker!

## Input Format

The first line of input contains two integers  $n$  and  $m$ , the lengths of the strings  $A$  and  $B$ .

The next line contains a string  $A$  of length  $n$ .

The next line contains a string  $B$  of length  $m$ .

## Output Format

The first and only line of output should contain a single integer, the maximum possible similarity between substrings of  $A$  and  $B$ .

## Limits

$1 \leq n, m \leq 5000$

## Sample Input 1

```
4 5
abba
babab
```

## Sample Output 1

```
5
```

## Sample Input 2

```
8 10  
bbbbabab  
bbbabaaaa
```

## Sample Output 2

```
12
```

## Sample Input 3

```
7 7  
uiibwws  
qhtkxcn
```

## Sample Output 3

```
0
```

## Explanation

For the first case:

abb from the first string and abab from the second string have LCS equal to abb.

The result is  $4 \times 3 - 3 - 4 = 12 - 3 - 4 = 5$ .