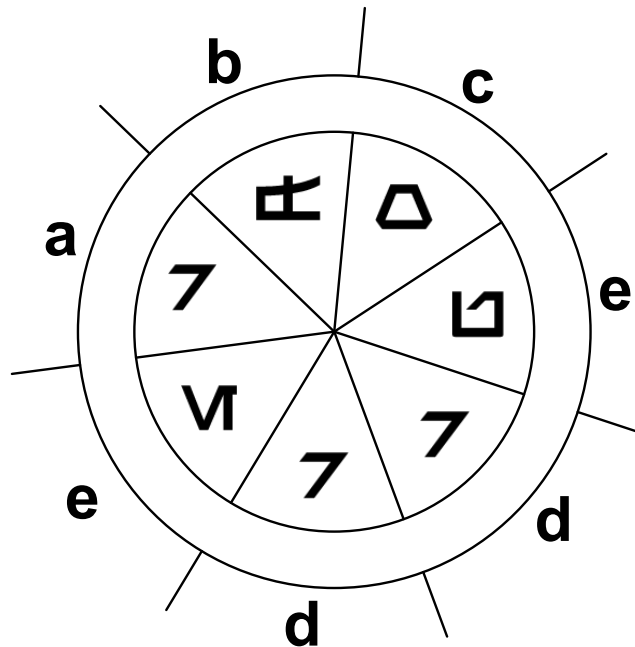


Problem C. Missing Part

Input file: *standard input*
Output file: *standard output*
Time limit: 1 second
Memory limit: 256 mebibytes

Recently, Han Solo has found the last missing part of the map of the Galaxy. This part as the shape of a thin disc. The hole in the map where the part should be inserted has the same shape. The problem is that Han Solo doesn't know the angle by which he should rotate this part.

However, there are some marks on the edge of the last part. The circle is divided into N arcs of equal length, and each of them is marked with one of the five hieroglyphs. Han Solo assumed that these marks mean five local space types. Based on this, he looked carefully at the main part of the map, split the circular border of the hole into N arcs of equal length and wrote down the local space type of each arc.



Now Han Solo should match each hieroglyph to one of the types, different hieroglyphs to different types, and insert the last part into the map, so that each arc on the last part will coincide with exactly one arc on the main part. Let the *suspiciousness* of these operations be the number of arcs on which the local space type on the main part differs from the type associated with the corresponding hieroglyph. Han wants to make the suspiciousness as little as possible. Help him to calculate the minimal suspiciousness among all possible placements and matchings.

Note that Han can't flip any part of the map, only rotation is possible.

Input

The first line of input contains one string denoting the hieroglyphs on the last part in clockwise order. For your convenience, the hieroglyphs are replaced with uppercase English letters from "A" to "E".

The second line of input contains one string denoting the local space types that Han Solo assigned to arcs on the main part of the map, also in clockwise order. The types are given as lowercase English letters from “a” to “e”.

The lengths of both strings are equal to some integer N ($1 \leq N \leq 50\,000$).

Output

Print a single integer: the minimal suspiciousness among all possible placements and matchings.

Examples

standard input	standard output
ABCD cdab	0
DABCCEC abcedde	1
ACBDCBABACD babcdbadcab	3

Note

In the first example, the disk should be rotated clockwise by two positions, and the hieroglyphs should be matched in the following way: $A \rightarrow a$, $B \rightarrow b$, $C \rightarrow c$, $D \rightarrow d$, $E \rightarrow e$. After that, the strings will become equal, and the suspiciousness will be zero.

In the second example, the disk shouldn't be rotated at all, and the hieroglyphs should be matched in the following way: $A \rightarrow b$, $B \rightarrow c$, $C \rightarrow e$, $D \rightarrow a$, $E \rightarrow d$. After that, the marks on the disk will form the string “abceede”. The suspiciousness of such placement and matching is equal to one.

The picture in the statement corresponds to the second example and shows the disk rotated clockwise by one position.