Problem H
Pinky Kat Challenge
Time Limit: 1 second

After a Math lecture at University of Rotation, professor Pinky Kat raises a challenge to her students with a prize of 1000 Kat Coins to encourage her students to apply what they learn into real-life problems. Professor Pinky Kat loves to rotate strings, thus the challenge is also about rotating strings.

She defines a rotation manipulation on string $s_0 s_1 \dots s_{n-1}$ by swaping the first character to the end to generate the string $s_1 s_2 \dots s_{n-1} s_0$. For example, rotating the string `"abcd"` in turn produces the following strings: `"bcda"`, `"cdab"`, `"dabc"`.

Consider the sequence s containing only alphanumeric characters from `'0'` to `'9'`. Let S be the set of rotation strings that do not contain the leading letter `'0'` of s. Thus, each element of S is a decimal that does not contain a meaningless leading zero. She denotes $f(S)$ as a set of decimal numbers generated from the set S. For example, with s=`"2019"` then

S= {`"2019"`,`"1920"`,`"9201"`} and $f(S) = \{2019, 1920, 9201\}$.

Consider two strings s and t. Let S, T be the sets of the two rotation strings that do not contain the leading digit `'0'`of s, t respectively. The students need to find the maximum value of $|x - y|$, where $x \in f(S)$ and $y \in f(T)$. Can you to solve the problem to win the prize?

Input

The first line contains the non-empty string s. The second line contains the non-empty string t. The length of each string does not exceed 3000.

Output

Print the maximum value of $|x - y|$, where $x \in f(S)$ and $y \in f(T)$.

Sample Input	Sample Output
2019 2020	7181