

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 $s_0s_1 \dots s_{n-1}$ by swapping the first character to the end to generate the string $s_1s_2 \dots s_{n-1}s_0$. 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

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

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 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. Each string contains at least one non-zero digit.

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
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