H - Insertions

We are given three strings, s, t and p. We will denote the length of a string by vertical bars, thus |s| is the length of s and so on. If we *insert* t into s at position k, where $0 \le k \le |s|$, the result is a new string consisting of the first k characters of s, followed by the entirety of t, and finally followed by the remaining |s| - k characters of s. We would like to select k so that the resulting new string will contain the largest possible number of occurrences of p as a substring.

Input data

The first line contains the string s, the second line the string t, and the third line the string p.

Input limits

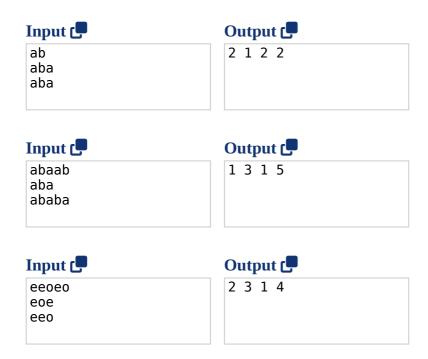
- $1 < |s| < 10^5$
- $1 \le |t| \le 10^5$
- $1 \le |p| \le 10^5$
- All the strings consist only of lowercase letters of the English alphabet.

Output data

Output one line containing the following four integers, separated by spaces:

- 1. The maximum number of occurrences of p we can get after inserting t into s at position k, if we choose the position k wisely.
- 2. The number of different k's (from the range $0,1,\ldots,|s|$) where this maximum number of occurrences of p is attained.
- 3. The minimum value of k where the maximum number of occurrences of p is attained.
- 4. The maximum value of k where the maximum number of occurrences of p is attained.

Examples



Comment

The first of these three examples is the one discussed earlier in the problem statement.