D. String Transformation

time limit per test: 2 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

Let s be a string whose length equals n. Its characters are numbered from 0 to n - 1, i and j are integers, $0 \le i < j < n$. Let's define function f as follows:

$$f(s, i, j) = s[i + 1 \ldots j - 1] + r(s[j \ldots n - 1]) + r(s[0 \ldots i]).$$

Here $s[p \ldots q]$ is a substring of string s, that starts in position p and ends in position q (inclusive); "+" is the string concatenation operator; $r(x)$ is a string resulting from writing the characters of the x string in the reverse order. If $j = i + 1$, then the substring $s[i + 1 \ldots j - 1]$ is considered empty.

You are given two strings a and b. Find such values of i and j, that $f(a, i, j) = b$. Number i should be maximally possible. If for this i there exists several valid values of j, choose the minimal j.

Input

The first two input lines are non-empty strings a and b correspondingly. Each string's length does not exceed 10^6 characters. The strings can contain any characters with ASCII codes from 32 to 126 inclusive.

Output

Print two integers i, j — the answer to the problem. If no solution exists, print "`-1 -1`" (without the quotes).

Examples

input Copy

```
Die Polizei untersucht eine Straftat im IT-Bereich.
untersucht eine Straftat.hciereB-TI mi  ieziloP eiD
```

output Copy

```
11 36
```

input Copy

```
cbaaaa
aaaabc
```

output Copy

```
4 5
```

input Copy

```
123342
3324212
```

output Copy

```
-1 -1
```