

Triway Cup '19 Summer C - String

Time limit: 1.0s **Memory limit:** 256M

Given a string S , concatenate it to itself N times, and call the result S' . Given a string T , you want to find the maximum number M such that T concatenated to itself M times is a subsequence of S' . String S consists of lowercase English letters and wildcard character $\&$, which can be any lowercase English letter, and string T consists of only lowercase English letters.

Constraints

$$|S|, |T| \leq 7\,500$$
$$N \leq 10^{15}$$

Input Specification

The first line of input contains string S .
The second line of input contains string T .
The final line has a single integer, N .

Output Specification

Output the value of M .

Sample Input 1

```
bab  
aba  
4
```

Sample Output 1

```
2
```

Sample Input 2

ba&
aba
4

Sample Output 2

3