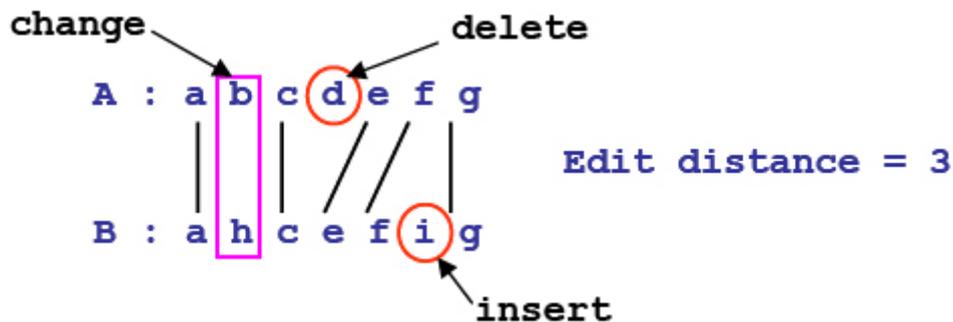


## 3608 Period

Given two strings  $A$  and  $B$  over an alphabet  $\Sigma$ , the *edit distance* between  $A$  and  $B$  is the minimum number of edit operations needed to convert  $A$  into  $B$ . The three edit operations are the following:

- (i) *change*: replace one character of  $A$  by another single character of  $B$ .
- (ii) *deletion*: delete one character from  $A$ .
- (iii) *insertion*: insert one character of  $B$  into  $A$ .

For example, the following figure shows that the edit distance between the strings  $A=abcdefg$  and  $B=ahcefig$  is 3. The edit operations are a change (i.e., replacing  $b$  of  $A$  by  $h$  of  $B$ ), a deletion (i.e., deleting  $d$  from  $A$ ), and an insertion (i.e., inserting  $i$  of  $B$  into  $A$ ).



We now define a period of a repetitive string as follows: The string  $p$  is called the *exact period* of a string  $x$  if  $x$  can be written as  $x = p^k$ , where  $k \geq 1$  and  $p$  is the shortest string. For example, if  $x = abababab$  then  $x = (abababab)^1 = (abab)^2 = (ab)^4$ . Thus, the string  $ab$  is the exact period of  $x$ .

We define an approximate period similarly. Given two strings  $x$  and  $y$ , suppose that the string  $x$  is partitioned into substrings  $p_i$ ,  $1 \leq i \leq t$ , where  $p_i$  is not a null string, i.e.,  $x = p_1 \cdot p_2 \cdot p_3 \cdots p_t$ . If the edit distance between a string  $y$  and each substring  $p_i$  is less than or equal to an integer  $k$ , string  $y$  is called a  *$k$ -approximate period* of string  $x$ .

In this problem, given two strings  $x$  and  $y$ , we want to find the minimum  $k$  such that string  $y$  is a  $k$ -approximate period of string  $x$ . For example, suppose that two strings  $x = abcdabcbabb$  and  $y = abc$  are given. Since  $x$  may be partitioned into  $x = p_1 \cdot p_2 \cdot p_3 = abcd \cdot abc \cdot abb$  and the edit distances between string  $y = abc$  and each substring  $abcd$ ,  $abc$ , and  $abb$  equal to 1, 0, and 1, respectively,  $y$  is a 1-approximate period of  $x$ . Hence, the minimum  $k$  is one.

### Input

Your program is to read from standard input. The input consists of  $T$  test cases. The number of test cases  $T$  is given in the first line of the input. For each test case, a string  $y$  is given in the first line and the string  $x$  is given in the next line. The length of string  $y$  is at least 1 and at most 50, the length of string  $x$  is at least 1 and at most 5000, and the alphabet  $\Sigma$  is the set of lowercase English characters.

### Output

Your program is to write to standard output. Print exactly one line for each test case. Print the minimum integer value  $k$  such that string  $y$  is a  $k$ -approximate period of string  $x$ .

**Sample Input**

```
3
abc
abcdabcabb
abab
abababababab
xyz
abcdefghijklmn
```

**Sample Output**

```
1
0
3
```