

Contest Duration: 2025-11-01(Sat) 23:00 (<http://www.timeanddate.com/worldclock/fixedtime.html?iso=20251101T2100&p1=248>) - 2025-11-02(Sun) 00:40 (<http://www.timeanddate.com/worldclock/fixedtime.html?iso=20251101T2240&p1=248>) (local time) (100 minutes)

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E - Shift String

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Time Limit: 2 sec / Memory Limit: 1024 MiB

Score : 450 points

Problem Statement

You are given strings A and B of equal length consisting of 0 and 1.

You can perform the following operation on A zero or more times.

- Move the first character of A to the end.

Find the minimum number of operations required to make $A = B$.

If it is impossible to make $A = B$ no matter how you operate, print -1 instead.

You are given T test cases; find the answer for each of them.

Constraints

- $1 \leq T \leq 10000$
- A and B are strings consisting of 0 and 1.
- $2 \leq |A| = |B| \leq 10^6$
- For a single input, the sum of $|A|$ does not exceed 10^6 .

Input

The input is given from Standard Input in the following format:

2026-01-02 (Fri)
05:32:36 +11:00

```
 $T$ 
case1
case2
:
case $T$ 
```

Each test case is given in the following format:

```
 $A$ 
 $B$ 
```

Output

Print T lines.

The i -th line should contain the answer for the i -th test case.

Sample Input 1

Copy

```
5
1010001
1000110
000
111
01010
01010
0101
0011
100001101110000001010110110001
101100011000011011100000010101
```

Copy

Sample Output 1

Copy

```
2
-1
0
-1
22
```

Copy

This input contains five test cases.

- For the first test case, $A = 1010001$ and $B = 1000110$.
 - By performing the operation on A twice, A becomes $1010001 \rightarrow 0100011 \rightarrow 1000110$, which makes $A = B$.

- For the second test case, no matter how you perform the operation, you cannot change 000 to 111.
 - For the third test case, $A = B$ from the beginning.
-

'#telegram)

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