HARBOUR SPACE UNIVERSITY

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PROBLEMS SUBMIT CODE MY SUBMISSIONS STATUS HACKS STANDINGS CUSTOM INVOCATION

B. String LCM

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

Let's define a multiplication operation between a string a and a positive integer x: $a\cdot x$ is the string that is a result of writing x copies of a one after another. For example, "abc" \cdot 2 = "abcabc", "a" \cdot 5 = "aaaaa".

A string a is divisible by another string b if there exists an integer x such that $b \cdot x = a$. For example, "abababab" is divisible by "ababab" or "aa".

LCM of two strings s and t (defined as LCM(s,t)) is the shortest non-empty string that is divisible by both s and t.

You are given two strings s and t. Find LCM(s,t) or report that it does not exist. It can be shown that if LCM(s,t) exists, it is unique.

Input

The first line contains one integer q ($1 \le q \le 2000$) — the number of test cases.

Each test case consists of two lines, containing strings s and t ($1 \le |s|, |t| \le 20$). Each character in each of these strings is either 'a' or 'b'.

Output

For each test case, print LCM(s,t) if it exists; otherwise, print -1. It can be shown that if LCM(s,t) exists, it is unique.

Example



Note

In the first test case, "baba" = "baba" \cdot 1 = "ba" \cdot 2.

In the second test case, "aaaaaa" = "aa" \cdot 3 = "aaa" \cdot 2.

Educational Codeforces Round 102 (Rated for Div. 2)

Finished

Practice



→ Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

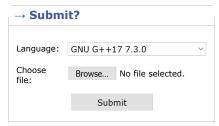
→ Practice

You are registered for practice. You can solve problems unofficially. Results can be found in the contest status and in the bottom of standings.

→ Clone Contest to Mashup

You can clone this contest to a mashup.

Clone Contest



→ Last submissions

Submission	Time	Verdict	
104321416	Jan/14/2021 18:36	Accepted	
104318265	Jan/14/2021 18:29	Wrong answer on test 3	

→ Problem tags

brute force math number theory

strings *1000

No tag edit access

→ Contest materials

Announcement

•	Tutorial			

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Problem - B - Codeforces



2 of 2 16-01-2021, 09:54 pm