Problem B. B

Time limit   2000 ms

Mem limit   262144 kB

You are given two strings a and b, consisting of lowercase Latin letters.

A template t is string, consisting of lowercase Latin letters and asterisks (character '*'). A template is called *asterisk-minor* if the number of asterisks in it is less than or equal to the number of letters in it.

A string s is said to be matching a template t if you can replace each asterisk in t with a string of lowercase Latin letters (possibly, an empty string) so that it becomes equal to s.

Find an *asterisk-minor* template such that both a and b match it, or report that such a template doesn't exist. If there are multiple answers, print any of them.

Input

The first line contains a single integer t ($1 \leq t \leq 10^4$) — the number of testcases.

The first line of each testcase contains a string a ($1 \leq |a| \leq 50$, where $|a|$ is the length of a), consisting of lowercase Latin letters.

The second line contains a string b ($1 \leq |b| \leq 50$), consisting of lowercase Latin letters.

Output

For each testcase, output "NO", if there doesn't exist an *asterisk-minor* template that both a and b match. Otherwise, print "YES" in the first line and the template in the second line. If there are multiple answers, print any of them.

A template should consist only of lowercase Latin letters and asterisks (character '*'). The number of asterisks should be less than or equal to the number of letters.

Examples

Input	Output
6 aaab zzzb codeforces atcoder codeforces tokitlx aaaa aaaaaa abcd abcd c f	YES *b YES *co* NO YES a*a*a*a YES abcd NO

Note

In the first testcase, for a template "*b", you can replace the only asterisk with "aaa" to get "aaab" (which is equal to a) or with "zzz" to get "zzzb" (which is equal to b).

In the third testcase, a template "*o*" is not *asterisk-minor*, as it contains more asterisks than letters. There are no *asterisk-minor* templates that both a and b match.

In the fourth testcase, for a template "a*a*a*a", you can replace all asterisks with empty strings to get "aaaa" (which is equal to a) or two of them with "a" and two of them with an empty string to get "aaaaaa" (which is equal to b).

In the fifth testcase, there are no asterisks in a template "abcd", so only "abcd" can match it (which is coincidentally both a and b).