

Cyclic String Checker

Given two ascii-strings s and s' . You should determine if s is a cyclic shift of s' .

Input

The first line contains the number of testcases t . Each of the following t lines contains two strings s and s' which are separated by one blank. The length of s and s' is smaller than 1,000,000.

Output

If the strings s is a cyclic shift of s' output YES otherwise NO.

Example

Input:

```
2
frei reif
hannenhalli illahannah
```

Output:

```
YES
NO
```