DRM Inc. is a firm that produces digital road maps. A digital map is a set of places and a set of streets between places. Streets are not oriented, i.e., they are two-way streets.

A road between a place a and a place b is a sequence of places $\langle u_0, u_1, ..., u_n \rangle$ such that $a = u_0$, $b = u_n$, and there is a street between u_i and u_{i+1} for $0 \leq i < n$.

The definition of a map is accomplished incrementally: a new version of a map is built adding details to an already defined one. The new map must be *consistent* with the old one, i.e., the new one must be *more detailed* than the old one, in the sense that

- the new map has at least the same places than the old one;

- for every street between places u and v in the old map, in the new one there is a road between u and v. Any intermediate place of this road must be a new place (not considered in the old map).

DRM building process includes a comparison step between consecutive map versions in order to assure consistence between them. You must help DRM to evaluate if a map is more detailed than another one.

Input

A map is represented with several input lines:

- the first line contains an identifier for the map

- the following lines, except the last one, contains identifiers of two places that define a street between them. Identifiers are separated with a blank character. It is guaranteed that a street is described only once, but places naming it could be given in any order. On the other hand, streets are named without any specific order.

- the last line contains the string '* * *' (star, blank, star, blank, star).

An identifier is a character string without blanks.

The problem input describes several cases, each one consisting of a pair of map representations. For each case you must evaluate if the second map of the given pair is a more detailed version of the first one.

The end of the input is specified by a line with the word END.

Output

Output texts for each input case are presented in the same order that input is read.

For each pair of maps named $< id1 >$ and $< id2 >$, if the map named $< id2 >$ is more detailed than the map named $< id1 >$, an output line of the form

`YES: < id2 > is a more detailed version of < id1 >`

must be written. In other case, the output must be of the form

`NO: < id2 > is not a more detailed version of < id1 >`

Sample Input

```
COL1
Bogota Cali
Bogota Barranquilla
* * *
COL2
Barranquilla Bogota
Armenia Cali
Barranquilla Armenia
Bogota Cali
Cali Barrranquilla
* * *
COL1
Bogota Cali
Bogota Barranquilla
* * *
COL3
Bogota Armenia
Armenia Cali
Cali Medellin
Medellin Barranquilla
* * *
END
```

Sample Output

```
YES: COL2 is a more detailed version of COL1
NO: COL3 is not a more detailed version of COL1
```