454   Anagrams

An anagram is a word or phrase formed by rearranging the letters of another word or phrase. For example, "carthorse" is an anagram of "orchestra". Blanks within a phrase are ignored in forming anagrams. Thus, "orchestra" and "horse cart" are also anagrams.

Write a program that reads a list of phrases and prints all pairs of anagrams occurring in the list.

Input

Input will consist of from 1 to 100 lines. A completely empty or blank line signals the end of input. Each line constitutes one phrase.

Output

Some number of lines (including possibly 0 if there are no anagrams in the list), each line containing two anagrammatic phrases separated by '='.

Each anagram pair should be printed exactly once, and the order of the two phrases within a printed pair must be lexicographic, as well as the first phrases and the second ones in case some first are equal.

Sample Input

```
carthorse
horse
horse cart
i do not know u
ok i now donut
orchestra
```

Sample Output

```
carthorse = horse cart
carthorse = orchestra
horse cart = orchestra
i do not know u = ok i now donut
```