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Problem F
Same Digits (Easy)

Two positive integers, x and y, are called *digit-preserving* if their product, xy, contains exactly the same digits as x and y contain together, including repetitions. For example, if $x = 807$ and $y = 984$, then their product, 794088, contains one 7, one 9, one 4, one 0, and two 8's, which is exactly the same set of digits and corresponding frequencies as in 807 and 984 combined.

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Given an interval, $[A, B]$, find all digit-preserving pairs, x, y, in the interval. This means that both x and y are in $[A, B]$, but note that their product, xy, is not required to be in $[A, B]$. To avoid double-counting, you can assume $x \leq y$ (this avoids, for example, treating $(807, 984)$ and $(984, 807)$ as different digit-preserving pairs).

Input

The input consists of a single line containing two space-separated integers, A and B, with $1 \leq A \leq B \leq 2\,500$.

Output

First output a single line containing "n digit-preserving pair(s)", where n is the number of digit-preserving pairs in $[A, B]$. Then output n lines, each of which contains one of the digit-preserving pairs and the corresponding product. Carefully format your output as in the sample output (note the single space separating adjacent tokens). These lines should be sorted by increasing value of x, breaking ties by increasing value of y.

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Sample Input 1

```
800 1000
```

Sample Output 1

```
12      digit-preserving
pair(s)
x = 800, y = 860, xy =
688000
x = 807, y = 984, xy =
794088
x = 825, y = 957, xy =
789525
x = 843, y = 876, xy =
738468
x = 855, y = 927, xy =
792585
x = 858, y = 951, xy =
815958
x = 875, y = 902, xy =
789250
x = 891, y = 909, xy =
809919
x = 891, y = 945, xy =
841995
x = 894, y = 906, xy =
809964
x = 896, y = 926, xy =
829696
x = 953, y = 986, xy =
939658
```

Sample Input 2

```
987 1234
```

Sample Output 2

```
0       digit-preserving
pair(s)
```

CPU Time limit   **4 seconds**

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Sample data files

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