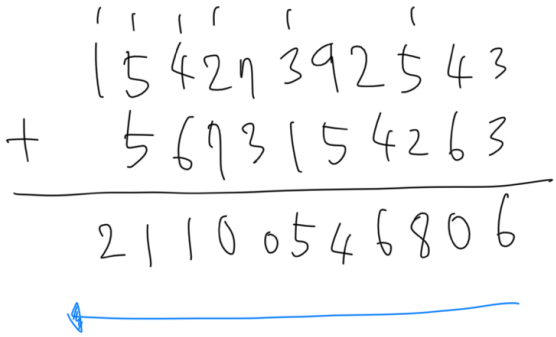
Problem G. Gigantic addition

Humans add two large integers like this:



Humans align each of the two numbers to the right, and add the digits from right to left. If there is a carry (i.e. if we sum the values and it is greater than 9), we additionally write a "1" in the top of the left adjacent digit and proceed.

In this problem, you are asked to do the same process with large integers (so large that it cannot be stored in a 64-bit integer!) As a proof that you used the exact same method, you should print the calculation process like this:

```
  1111 1  1          1111 1   1          1
  15427392543         79381923192         4844
+  5673154263      + 85673154263      + 139011
============       ============       ========
  21100546806        165055077455        143855
```

To be precise, the format should be like this (suppose we add a and b)

- You should print exactly 5 lines. Each line should contain exactly $\max(d(a), d(b)) + 2$ characters, where $d(i)$ is the number of digits in i.
- In the first line, you should print all the carries. You should print a '1' in positions that humans write a carry, and print a space ' ' for all the other positions. Even if there isn't any carry, you must print this line (in this case all characters would be spaces)
- In the second line, you should print the first number, aligned to the right. So the last $d(a)$ characters should describe the number a, and all other characters should be a space ' '.

- In the third line, you should print the plus sign and the second number. So the first character should be a plus sign '+', and the last $d(b)$ characters should describe the number b, and all other characters should be a space ' '.
- In the fourth line, you should print $\max\big(d(a), d(b)\big) + 2$ equal signs '='.
- In the last line, you should print the number $a + b$, aligned to the right. So the last $d(a + b)$ characters should describe $a + b$, and all the other characters should be a space ' '.

Write a program that reads a and b, and prints out the calculation process of humans.

Input

Your input consists of an arbitrary number of records, but no more than 100.

Each record is a line that contains two integers a and b $(1 \leq a, b \leq 10^{100})$ Note that *this number is NOT ABLE TO STORE IN A INT(32-BIT INTEGERS) OR LONG LONG(64-BIT INTEGERS) TYPE!* It is guaranteed that there are no leading zeroes given.

The end of input is indicated by a line containing only the value -1.

Output

For each input record, print 5 lines in the way described above. In this problem the checking script is very strict, so you should print the characters correctly.

Example

Standard input	Standard output
15427392543 5673154263 79381923192 85673154263 4844 139011 1234 4321 -1	1111 1 1 15427392543 + 5673154263 ========== 21100546806 1111 1 1 79381923192 + 85673154263 ========== 165055077455 1 4844 + 139011 ======== 143855 1234 + 4321 ====== 5555

Time Limit

1 second.