Numerology   P50084_en

Segon Concurs de Programació de la UPC - Segona Semifinal (2004-09-15)

According to the Bible, 666 is the "number of the beast". Indeed, in Revelation 13:18 it is said:

> "...*count the number of the beast: for it is the number of a man; and his number is 666.*"

Many theologists have associated 666 with the Antichrist. Believe it or not, 666 has many interesting numerological properties. For instance,

$$
\begin{aligned}
666 &= 3^6 - 2^6 + 1^6 \\
&= 1 + 2 + 3 + \cdots + 6 \cdot 6 \\
&= 2^2 + 3^2 + 5^2 + 7^2 + 11^2 + 13^2 + 17^2.
\end{aligned}
$$

Another curious property is that it is possible (there are exactly two ways) to insert '+' signs into the number 123456789 to get 666:

$$
666 = 1 + 2 + 3 + 4 + 567 + 89 = 123 + 456 + 78 + 9,
$$

and it is also possible (there is exactly one way) to do the same with the number 987654321:

$$
666 = 9 + 87 + 6 + 543 + 21.
$$

Let's play numerology. Write a program such that, given two numbers n and m, prints all the ways to insert '+' signs into m so that the sum is n.

Input

Input consists of several cases. Every case has two strictly positive natural numbers n and m, each not larger than 10^{12}. Assume that the leftmost digit of n and of m is never zero.

Output

For every case, print all the ways to get n by adding the digits of m as explained above. The solutions must appear in lexicographical order. If no solution exists, state so.

Sample input

```
666 987654321
5 321
4 1003
```

Sample output

```
666 = 9 + 87 + 6 + 543 + 21
No solution for 5 321.
4 = 1 + 0 + 0 + 3
4 = 1 + 0 + 03
4 = 1 + 00 + 3
4 = 1 + 003
```

Problem information

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