PROBLEM B
Base Addition

Given 3 values, s1, s2, s3, what is the smallest integer having a base less than or equal to 36 such that s1 + s2 = s3? Each string, s1,s2,s3, is composed of digits and upper case letters, with ASCII value ordering (0123?XYZ).

INPUT:
Groups of 3 strings (one per line) s1, s2, s3.
Each string will be at most 80 characters.
Each string will consist entirely of digits & upper−case letters.
Input will end with a single 0 alone on a line.
Thus, the total number of lines will be 3*k + 1 (for some integer k).
There will be no leading zeros.
Input file for this problem is **b.dat**

OUTPUT:
For each triplet of s1, s2 and s3, print one line of output (line−wrap is allowable for long strings):
If a value, x, is found that meets the criteria, print: `s1 + s2 = s3 in base x`
If no answer exists, print: `s1 + s2 != s3`

SAMPLE INPUT:
```
5
3
10
5
3
11
5
3
8
5
3
7
ABC
DEF
18AB
1111111111111111111
2222222222222222222
3333333333333333333
0
```

SAMPLE OUTPUT:
```
5 + 3 = 10 in base 8
5 + 3 = 11 in base 7
5 + 3 = 8 in base 9
5 + 3 != 7
ABC + DEF = 18AB in base 16
1111111111111111111 + 2222222222222222222 = 3333333333333333333 in base 4
```