

## 4583 Been Rational

Robert found out that every rational number  $x = p/q$  can be represented uniquely as a finite simple continued fraction represented by the finite sequence of integers  $\{a_0, a_1, a_2, \dots, a_N\}$  as long as  $a_N > 1$ .

Now,

$$\{a_0, a_1, a_2, \dots, a_N\} = a_0 + \frac{1}{a_1 + \frac{1}{a_2 + \frac{1}{\dots + \frac{1}{a_{N-1} + \frac{1}{a_N}}}}}$$

For example,  $4/11 = \{0, 2, 1, 2\}$  since  $4/11 = 0 + 1/(2 + 1/(1 + 1/3))$ . Your task is to help Robert by writing a program that will automatically compute the finite sequence of integers to a given rational number  $p/q$ .

### Input

The input consists of several input lines. Each input line consists of non-negative integer  $p$  and positive integer  $q$ . The numbers  $p$  and  $q$  represent the rational number  $p/q$ .

### Output

For each input line consisted by  $p$  and  $q$ , output the rational number ' $p/q$ ', an equality symbol, and the computed finite sequence of integers representing the simple finite continued fraction. The finite sequence of integers should be enclosed in curly braces with integer elements separated by a comma. If  $p < 0$  or  $q \leq 0$ , the program should output 'INVALID INPUT' and continue processing the subsequent input.

The program should terminate immediately if  $p$  is zero.

### Sample Input

```
5 1
4 11
8 22
-3 11
0 1
```

### Sample Output

```
5/1={5}
4/11={0,2,1,3}
8/22={0,2,1,3}
INVALID INPUT
```