

Working with summation is easy but sometimes tricky as well, especially when we have to deal with very small numbers within them. For example given the value of m, n you have to find the value of the following expression:

$$\sum_{j=1}^n \sum_{i=1}^m \frac{1}{i(i+1)(i+2)(i+3)j(j+1)(j+2)(j+3)}$$

Or in other words if

$$\sum_{j=1}^n \sum_{i=1}^m \frac{1}{i(i+1)(i+2)(i+3)j(j+1)(j+2)(j+3)} = \frac{a}{b},$$

then you will have to find the values of a and b . Here a and b are two relative prime integers. The values of a and b will not always fit even in a 64-bit unsigned integer.

Input

The input file contains 2000 lines of inputs. Each line contains two integers which denotes the values of m and n ($1 \leq m, n \leq 1000000000$) respectively. Input is terminated by a line containing two zeroes. This line should not be processed.

Output

For each line of input produce four lines of outputs. The descriptions of these four lines are given below:

The first line of each set contains the serial of output. Next line prints out the value of a , the third line contains the dividing line of the fraction and the fourth line contains the value of b . The length of the dividing line is equal to the length of b .

Print a blank line after the output of each set of input.

Sample Input

```
30 30
3 5
0 0
```

Sample Output

```
Case 1:
29757025
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9644811264
```

```
Case 2:
209
-----
72576
```