Problem J

How Many Solutions?

Input: Standard Input
Output: Standard Output
Time Limit: 2 Second

Given the values of three integers m, n, p how many integer solutions does the following equation have?

$$\frac{m}{x}+\frac{n}{y}=\frac{1}{p}$$

Input

The input file contains at most **1001** sets of inputs. Each set of input is given in a single line containing three integers which denotes the values of m, n and p respectively.

Input is terminated by a case where the value of **m**, **n** and **p (-1000 ≤ m, n, p ≤ 1000)** is zero.

Output

For each set of input produce one line of output which contains the serial of output followed by an integer **N** which indicates how many solutions are there for the given value of **m**, **n** and **p**.

Sample Input	Output for Sample Input
1 2 4 2 3 4 0 0 0	Case 1: 11 Case 2: 23

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Be ware!! This problem has no alternate solution.

Comment:

The equation corresponding to the first sample input is: $\frac{1}{x}+\frac{2}{y}=\frac{1}{4}$ and the 11 solutions corresponding to this equation is:

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-28 7
-12 6
-4 4
2 -8
3 -24
5 40
6 24
8 16
12 12
20 10
36 9
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