Diophantine Equation

The *extended Euclid's algorithm* determines not only the greatest common divisor d of two positive integers m and n but also integers (not necessarily positive) x and y, such that $mx + ny = d$. Modify the algorithm to find integer solutions to the Diophantine equation $ax + by = c$ with any set of integer coefficients a, b, and c (non-zero a and b).

Input

There may be multiple cases. Each case will be presented on a separate line with the three integer coefficients a, b, and c separated by white space. The last case will be followed by a line containing a 0 (zero) for a and/or b. All integers will fit within 32 bit signed notation.

Output

For each case display the case number and the particular solution, if it exists, formatted as in the Sample Output. If either x and/or y is ambiguous, say so. If there is no solution, say so.

Sample Input

```
   2    5    20
1027    712    1
    51    712    0
  -2    5   20
4   0       8
```

Sample Output

```
Case 1: -40 20
Case 2: -165 238
Case 3: 0 0
Case 4: 140 60
```