Exercise on modular operations

You are given three positive integers a, b and c. We know that there are four arithmetic operations: $a + b$, $a - b$, $a \times b$, $a \div b$. We want to calculate these values modulo c, as the result of the calculation may be super large.

However, sometimes it is impossible to find $a \div b \bmod c$ (as we mentioned in the lecture). So we ask you to write a program that calculates the value of $(a + b) \bmod c$, $(a - b) \bmod c$ and $(a \times b) \bmod c$.

Input

Your input consists of an arbitrary number of lines, but no more than 1,000.

For each line, three positive integers a, b and c ($1 \leq a, b, c \leq 10^9$) are given.

The end of input is indicated by a line containing only the value -1.

Output

Print $(a + b) \bmod c$, $(a - b) \bmod c$ and $(a \times b) \bmod c$, separated by a space.

Example

Standard input	Standard output
123 45 67 1999 1 21 -1	34 11 41 5 3 4

Time Limit

1 second.