

SWE2004: Principles in Programming (Spring 2013)

Programming Lab #7
Due-date : May 2th, 11:59 PM

Description

From Euclid it is known that for any positive integers A and B there exist such integers X and Y that $AX+BY=D$, where D is the greatest common divisor of A and B. The problem is to find for given A and B corresponding X, Y and D.

Input

The first line contains the number of tests $t(1 \leq t \leq 5000)$. Each case will consist of a set of lines with the integer numbers A and B, separated with space ($A, B < 1,000,000,001$).

Output

For each input line the output line should consist of three integers X, Y and D, separated with space. If there are several such X and Y, you should output that pair for which $|X|+|Y|$ is the minimal (primarily) and the smaller X or Y on the left side. (secondarily).

Sample Input

```
2
4 6
17 17
```

Sample Output

```
-1 1 2
0 1 17
```