Problem D. Strange Fractions

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	256 megabytes

Given a positive fraction $\frac{p}{q}$, you should find two positive integers a, b that $\frac{p}{q} = \frac{a}{b} + \frac{b}{a}$. If no such integers, report it.

Input

The first line contains one integer $T\,(1 \le T \le 10^5)$, denoting the number of test cases.

For each test case:

Input one line containing two integers $p, q\,(1 \le p, q \le 10^7)$, denoting the given fraction.

Output

For each test case:

If solution exists, output one line containing two integers $a, b\,(1 \le a, b \le 10^9)$, or print two zeros in one line if no solution.

Example

standard input	standard output
2 5 2 5 1	1 2 0 0

Note

For the first case, $\frac{5}{2} = \frac{1}{2} + \frac{2}{1}$ holds. So one possible solution is $a = 1, b = 2$.