X and Y are two integer numbers and $X \geq Y$. The values of X and Y fits in 16-bit signed integer. When the summation of these two numbers is multiplied with Y we get P and when the absolute value of the subtraction of these two numbers is multiplied with X we get Q. Given the value of P and Q you must find the value of X and Y.

Input

The first line of the input file contains an integer N ($N \leq 75000$) that denotes how many lines of inputs are there. Each of the next N lines contains two integers which denotes the values P and Q respectively, here $|P| < 2^{31}$, $|Q| < 2^{31}$.

Output

For each line of input except the first one produce exactly two lines of output. The first line contains the serial of output and the next one contains possible values of X and Y. If there is more than one solution print the pair with smaller X value. When the given values of P and Q is impossible for any integer value of X and Y print the line 'Impossible.' instead.

Sample Input

```
3
160 48
200 100
300 200
```

Sample Output

```
Case 1:
12 8
Case 2:
Impossible.
Case 3:
20 10
```