The properties of integer values have been studied for centuries in number theory. Two important concepts developed are the greatest common divisor (GCD), and least common multiple (LCM). Given two integers x and y. The GCD is defined as the largest integer value which can divide both x and y, while the LCM is defined as the smallest integer value which can be divided by both x and y. A special properties among x, y, and their GCD, and LCM is

$$xy = GCD(x, y) \times LCM(x, y).$$

To determine the values of GCD and LCM, we can first calculate the value of GCD by using the Euclid's algorithm:

$$GCD(x, y) = GCD(y, x \bmod y)$$

and

$$GCD(x, 0) = x.$$

After the value of GCD is determined, the value of LCM can be obtained:

$$LCM(x, y) = \frac{xy}{GCD(x, y)}.$$

Write a program to calculate the GCD and LCM. You have to wrap the calculation of GCD and LCM into two functions.

Input

The input contains several cases and ends with EOF. Each case contains two integer values, which in turn represent x and y.

Output

For each case, output the GCD and LCM of x and y.

Sample Input

```
4 7
6 3
21 9
```

Sample Output

```
1 28
3 6
3 63
```