Q2.

There is a specific template for you guys to start coding.
You can add other members in your class, but please follow the rules shown below.

Make sure that your class name is PrimeFactorization.
You should use “vector” to implement this program.

For this problem, you need to calculate the prime factorization of two numbers, GCD(Greatest Common Divisor), and LCM(Least Common Multiple)

Five specific functions you should implement are:

a. The constructor with two integers as arguments.
b. The function: Get_Prime_Factorization().
c. The function: Print_Prime_Factorization().
d. The function: Print_GCD().
e. The function: Print_LCM().

You must use the result of Get_Prime_Factorization() to find the GCD, and use the result of GCD to find the LCM.
See the template for details.

Input format

The first line shows the number of test cases.
Each of the following lines contains two integers a, b.

Output Format

The output format should contain the prime factorization of two numbers, GCD, and LCM.
See the sample output for the details.
The printed result of the prime factorization must be in order (small to large).
If the two integers are “co-prime”, then just print "1".

Sample Input

```
5
123456   661152
51284   12387
3254   9182
```

2813291 870090
1043115528 1201746

Sample Output

num1 = 123456
num2 = 661152
num1_Prime_factor : " 2 2 2 2 2 2 3 643 "
num2_Prime_factor : " 2 2 2 2 2 3 71 97 "
GCD : 96
LCM : 850241472

num1 = 51284
num2 = 12387
num1_Prime_factor : " 2 2 12821 "
num2_Prime_factor : " 3 4129 "
GCD : 1
LCM : 635254908

num1 = 3254
num2 = 9182
num1_Prime_factor : " 2 1627 "
num2_Prime_factor : " 2 4591 "
GCD : 2
LCM : 14939114

num1 = 2813291
num2 = 870090
num1_Prime_factor : " 13 23 97 97 "
num2_Prime_factor : " 2 3 5 13 23 97 "
GCD : 29003
LCM : 84398730

num1 = 1043115528
num2 = 1201746
num1_Prime_factor : " 2 2 2 3 7 7 13 31 31 71 "
num2_Prime_factor : " 2 3 7 13 31 71 "
GCD : 1201746
LCM : 1043115528