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.
1. Make sure that your class name is PrimeFactorization.

For this problem, you need to calculate the prime factorization of two number and GCD(Greatest Common Divisor).
Four 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_Factorization().
You must use the result of Get_Prime_Factorization() to find the prime factorization of GCD.
See the template for the detail.

Input Format

Please implement the file I/O part.
You MUST read the input data from the input.txt.

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 number and GCD.
See the sample output for the detail.
The printed result must be in order (small to large).
If the GCD of two integer is 1 (means co-prime), then just print " 1 " .

Sample Input (in input.txt)

```
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_Prime_factor : " 2 2 2 2 2 3 "

num1 = 51284
num2 = 12387
num1_Prime_factor : " 2 2 12821 "
num2_Prime_factor : " 3 4129 "
GCD_Prime_factor : " 1 "

num1 = 3254
num2 = 9182
num1_Prime_factor : " 2 1627 "
num2_Prime_factor : " 2 4591 "
GCD_Prime_factor : " 2 "

num1 = 2813291
num2 = 870090
num1_Prime_factor : " 13 23 97 97 "
num2_Prime_factor : " 2 3 5 13 23 97 "
GCD_Prime_factor : " 13 23 97 "

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_Prime_factor : " 2 3 7 13 31 71 "