12044   Extreme Divisors

Let us define the functions $d(n)$ and $\sigma(n)$ as

$$\begin{aligned}
d(n) &= \text{number of divisors of } n \\
\sigma(n) &= \text{summation of divisors of } n
\end{aligned}$$

Here divisors of n include both 1 and n. For example divisors of 6 are 1, 2, 3 and 6. So $d(6) = 4$ and $\sigma(n) = 12$.

Now let us define two more function $g(a, b, k)$ and $h(a, b, k)$ as

$$\begin{aligned}
g(a, b, k) &= \sum_i d(i) \\
h(a, b, k) &= \sum_i \sigma(i)
\end{aligned}$$

Where $a \leq i \leq b$ and i is divisible by k.

For example, $g(5, 12, 3) = d(6) + d(9) + d(12) = 4 + 3 + 6 = 13$ and $h(5, 12, 3) = \sigma(6) + \sigma(9) + \sigma(12) = 13 + 13 + 28 = 53$. Given a, b, k you have to calculate $g(a, b, k)$ and $h(a, b, k)$.

Input

The first line of the input file contains an integer T ($T \leq 75$) which denotes the total number of test cases. The description of each test case is given below:

Three integers in a line. First integer is contains a, second integer is b and third integer is k. You may assume $0 < a \leq b \leq 10^{12}$, $0 < k < 2000$.

Output

For each test case print one line containing $g(a, b, k)$ and $h(a, b, k)$ separated by a space as defined above. As output may be very large print the output *modulo* 2^{64}.

Sample Input

```
2
5 12 3
1 100 3
```

Sample Output

```
13 53
217 3323
```