XIV POI Stage I - Queries

Time limit: 7.0s **Memory limit:** 32M

Byteasar the Cryptographer works on breaking the code of BSA (Byteotian Security Agency). He has already found out that whilst deciphering a message he will have to answer multiple queries of the form - for given integers a, b, and d, find the number of integer pairs (x, y) satisfying the following conditions:

- $1 \leq x \leq a$,
- $1 \leq y \leq b$,
- $\gcd(x, y) = d$, where $\gcd(x, y)$ is the greatest common divisor of x and y.

Byteasar would like to automate his work, so he has asked for your help.

Write a program which:

- reads from the standard input a list of queries, which the Byteasar has to give the answer to,
- calculates answers to the queries,
- writes the outcome to the standard output.

Input

The first line of the standard input contains one integer n $(1 \leq n \leq 50\,000)$, denoting the number of queries. The following n lines contain three integers each: a, b, and d $(1 \leq d \leq a, b \leq 50\,000)$, separated by single spaces. Each triplet denotes a single query.

Output

Your program should write n lines to the standard output. The i'th line should contain a single integer: the answer to the i'th query from the standard input.

Sample Input

```
2
4 5 2
6 4 3
```

Sample Output

```
3
2
```

Judge Input Metadata

Note - because DMOJ judges are substantially faster than POI judges, the time limits on DMOJ are 2/3rds the official time limits. However, the minimum time limit is always 0.1 seconds.

```
$ wc -l zap*.in
     11 zap1.in - official TL 0.1s
     38 zap2.in - official TL 0.1s
    101 zap3.in - official TL 0.1s
  12501 zap4.in - official TL 0.3s
  50000 zap5.in - official TL 3.0s
  50001 zap6.in - official TL 3.5s
    101 zap7.in - official TL 0.4s
   3125 zap8.in - official TL 0.4s
  12502 zap9.in - official TL 1.5s
  50001 zap10.in - official TL 10.5s
  49730 zap11.in - official TL 8.0s
  50001 zap12.in - official TL 0.2s
  49771 zap13.in - official TL 4.5s
  50001 zap14.in - official TL 4.0s
  50001 zap15.in - official TL 10.0s
      3 zap0.in - official TL 0.1s
      2 zap1ocen.in - official TL 0.1s
      4 zap2ocen.in - official TL 0.1s
      6 zap3ocen.in - official TL 0.1s
  50001 zap4ocen.in - official TL 0.2s
```