

# COCI '08 Contest 4 #5 Trezor

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**Time Limit:** 3.0s    **Memory Limit:** 32M

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Mirko decided to open a new business – bank vaults. A branch of the bank can be visualized in a plane, vaults being points in the plane. Mirko's branch contains exactly  $L \cdot (A + 1 + B)$  vaults, so that each point with integer coordinates inside the rectangle with corners  $(1, -A)$  and  $(L, B)$  contains one vault.

The vaults are watched by two guards – one at  $(0, -A)$ , the other at  $(0, B)$ . A guard can see a vault if there are no other vaults on the line segment connecting them.

A vault is not secure if neither guard can see it, secure if only one guard can see it and super-secure if both guards can see it.

Given  $A$ ,  $B$  and  $L$ , output the number of insecure, secure and super-secure vaults.

## Input Specification

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The first line contains integers  $A$  and  $B$  separated by a space ( $1 \leq A \leq 2000, 1 \leq B \leq 2000$ ). The second line contains the integer  $L$  ( $1 \leq L \leq 1\,000\,000\,000$ ).

## Output Specification

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Output on three separate lines the numbers of insecure, secure and super-secure vaults.

## Scoring

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In test cases worth 50% of points,  $L$  will be at most 1000.

In test worth another 25% of points,  $A$  and  $B$  will be at most 100 (but  $L$  can be as large as one billion).

## Sample Input 1

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```
1 1
3
```

## Sample Output 1

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```
2
2
5
```

## Sample Input 2

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```
2 3
4
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## Sample Output 2

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```
0
16
8
```

## Sample Input 3

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```
7 11
1000000
```

## Sample Output 3

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```
6723409
2301730
9974861
```