code jam
System.out.println("hello, world!");

Practice Mode

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Round 1B 2008

A. Crop Triangles

B. Number Sets

C. Mousetrap

Contest Analysis

Questions asked 3

Problem B. Number Sets

This contest is open for practice. You can try every problem as many times as you like, though we won't keep track of which problems you solve. Read the Quick-Start Guide to get started.

Small input 10 points	Solve B-small
Large input 25 points	Solve B-large

Problem

You start with a sequence of consecutive integers. You want to group them into sets.

You are given the interval, and an integer **P**. Initially, each number in the interval is in its own set.

Then you consider each pair of integers in the interval. If the two integers share a prime factor which is at least **P**, then you merge the two sets to which the two integers belong.

How many different sets there will be at the end of this process?

Input

One line containing an integer **C**, the number of test cases in the input file.

For each test case, there will be one line containing three single-space-separated integers **A**, **B**, and **P**. **A** and **B** are the first and last integers in the interval, and **P** is the number as described above.

Output

For each test case, output one line containing the string "Case #X: Y" where X is the number of the test case, starting from 1, and Y is the number of sets.

Limits

Small dataset

1 <= **C** <= 10

1 <= **A** <= **B** <= 1000

2 <= **P** <= **B**

Large dataset

1 <= **C** <= 100

1 <= **A** <= **B** <= 10^{12}

B <= **A** + 1000000

2 <= **P** <= **B**

Sample

- Submissions

Crop Triangles

5pt	Not attempted **1445/2197 users** correct (66%)
10pt	Not attempted **457/1287 users** correct (36%)

Number Sets

10pt	Not attempted **777/1351 users** correct (58%)
25pt	Not attempted **100/448 users** correct (22%)

Mousetrap

15pt	Not attempted **610/862 users** correct (71%)
35pt	Not attempted **95/387 users** correct (25%)

- Top Scores

mystic	100
nika	100
bmerry	100
dgozman	100
ilyaraz	100
misof	100
tourist	100
vlad89	100
lordmonsoon	100
falagar	100

Input	Output
2 10 20 5 10 20 3	Case #1: 9 Case #2: 7

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