

Round 1C 2011

[A. Square Tiles](#)[B. Space Emergency](#)**C. Perfect Harmony**[Contest Analysis](#)[Questions asked](#) **2**

Submissions

Square Tiles

10pt Not attempted
4043/4140 users
correct (98%)10pt Not attempted
3857/4035 users
correct (96%)

Space Emergency

12pt Not attempted
1442/2158 users
correct (67%)25pt Not attempted
656/1158 users
correct (57%)

Perfect Harmony

8pt Not attempted
2839/3507 users
correct (81%)35pt Not attempted
60/1308 users
correct (5%)

Top Scores

Burunduk1	100
mystic	100
yuhch123	100
Qifeng.Chen	100
ikatanic	100
Smylic	100
Copludrm	100
AS1	100
zhendongjia	100
Akim	100

Problem C. Perfect Harmony

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
8 points

Solve C-small

Large input
35 points

Solve C-large

Problem

Jeff is a part of the great Atlantean orchestra. Each player of the orchestra has already decided what sound will he play (for the sake of simplicity we assume each player plays only one sound). We say two sounds are in harmony if the frequency of any one of them divides the frequency of the other (that's a pretty restrictive idea of harmony, but the Atlanteans are known to be very conservative in music). Jeff knows that the notes played by other players are not necessarily in harmony with each other. He wants his own note to improve the symphony, so he wants to choose his note so that it is in harmony with the notes all the other players play.

Now, this sounds simple (as all the frequencies are positive integers, it would be enough for Jeff to play the note with frequency 1, or, from the other side, the Least Common Multiple of all the other notes), but unfortunately Jeff's instrument has only a limited range of notes available. Help Jeff find out if playing a note harmonious with all others is possible.

Input

The first line of the input gives the number of test cases, **T**. **T** test cases follow. Each test case is described by two lines. The first contains three numbers: **N**, **L** and **H**, denoting the number of other players, the lowest and the highest note Jeff's instrument can play. The second line contains **N** integers denoting the frequencies of notes played by the other players.

Output

For each test case, output one line containing "Case #x: y", where x is the case number (starting from 1) and y is either the string "NO" (if Jeff cannot play an appropriate note), or a possible frequency. If there are multiple frequencies Jeff could play, output the lowest one.

Limits

 $1 \leq T \leq 40$.

Small dataset

 $1 \leq N \leq 100$. $1 \leq L \leq H \leq 10000$.

All the frequencies are no larger than 10000.

Large dataset

 $1 \leq N \leq 10^4$. $1 \leq L \leq H \leq 10^{16}$ All the frequencies are no larger than 10^{16}

Sample

Input	Output
2	Case #1: NO
3 2 100	Case #2: 10
3 5 7	
4 8 16	
1 20 5 2	

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