Mock CCO '18 Contest 3 Problem 6 - Roger Asks For More Marks

Roger has taken N tests in preparation for CCO. On each test, there were a total of b_i marks available and Roger got a_i marks. Roger's final score is $\frac{\sum_i a_i}{\sum_i b_i}$. Roger's test percentages are all distinct.

Roger's teacher decides that, for some value of D, Roger's D lowest percentages will be dropped in evaluating his final score. Roger discovers that it may be possible to select a different set of D tests to drop which will result in a strictly higher score. Compute all D such that this is the case.

Constraints

$1 \leq N \leq 5 \cdot 10^4$

$0 \leq a_i \leq b_i < 4 \cdot 10^4$

$b_i > 0$

Input Specification

The first line will contain an integer N.

Each of the next N lines contains two integers, a_i and b_i.

Output Specification

Output $K+1$ lines. On the first line, output K. On each of the next N lines, in ascending order, print the values of D for which Roger can do better than his teacher in maximizing his score. All valid values of D must be generated.

Sample Input

```
5
1 2
5 9
3 8
4 10
1 3
```

Sample Output

```
2
1
2
```