Problem A
Mix Condiments

Time Limit: 2 seconds

You are working in the development department of Incredible Condiment Product Corporation. This company currently sells n kinds of condiments numbered 1 through n. The condiment i has acridity a_i and sourness s_i.

A recent market research revealed that consumers desire a new condiment of acridity x and sourness y, though none of the n condiments has such taste. Here, you wonder whether such a condiment can be manufactured by mixing two of the condiments. If two condiments are mixed to create a new one, its acridity and sourness are the weighted means from the two. More precisely, by mixing p gram of condiment c and q gram of condiment d where p and q are any positive real numbers, the acridity and sourness of the new condiment become $\frac{pa_c + qa_d}{p+q}$ and $\frac{ps_c + qs_d}{p+q}$, respectively.

Please find all the possible unordered pairs of condiments such that by mixing those two in some ratio, you can create a condiment of acridity x and sourness y.

Input

The input consists of a single test case of the following format.

n
a_1 s_1
a_2 s_2
$\vdots$
a_n s_n
x y

The first line contains an integer n ($2 \leq n \leq 50$) representing the number of condiments that your company currently sells. Each of the following n lines contains two integers a_i and s_i ($0 \leq a_i, s_i \leq 50$) representing the acridity and sourness of condiment i. The last line contains two integers x and y ($0 \leq x, y \leq 50$) representing the acridity and sourness of the condiment that consumers desire.

It is guaranteed that $(a_i, s_i) \neq (x, y)$ for any i ($1 \leq i \leq n$).

Output

Print the answer in the following format.

m
c_1 d_1
c_2 d_2
$\vdots$
c_m d_m

m is the number of all pairs of condiments such that by mixing those two in some ratio, you can create a condiment of acridity x and sourness y. c_i and d_i ($1 \leq c_i < d_i \leq n$) are the numbers of condiments in each pair.

The pairs must be output in the lexicographical order. More precisely, for any i and j ($1 \leq i < j \leq m$), either of the following properties must hold.

- $c_i < c_j$
- $c_i = c_j$ and $d_i < d_j$

Sample Input 1

```
8
8 6
4 8
6 0
10 5
3 7
6 50
7 7
8 6
6 7
```

Sample Output 1

```
5
1 2
2 4
2 8
3 6
5 7
```

Sample Input 2

```
6
10 20
10 30
20 10
30 10
0 0
49 50
10 10
```

Sample Output 2

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0
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