

Leonardo Da Vinci's Game



"Simplicity is the ultimate sophistication." -Lenoardo Da Vinci

Leonardo da Vinci was an Italian polymath of the Renaissance, whose areas of interest included invention, painting, sculpting, architecture, science, music, mathematics, engineering, literature, anatomy, geology, astronomy, botany, writing, history, and cartography. On one fine morning while procrastinating he invented a new game called The Flower of Life.

The game has two players. The rules of the game are quite simple. There are P pairs of numbers, each containing a number X and Y . Initially P numbers are generated from each of the P pairs with uniform probability. The set of P numbers generated are called the set fin . In the next part of the game, there are P stacks of blocks where the number of blocks in stack i is given by the value fin_i . On each turn, a player picks a pile and removes any number of blocks (at least one) from that pile. The player who cannot make a move loses. Find the probability that the first player wins. Express the probability as an irreducible fraction.

Input Format

The first line of the input contains P .

P lines follow with each line containing the pairs of numbers X and Y .

Constraints

- $1 \leq P \leq 500,000$
- $1 \leq fin_i \leq 10^{18}$

Output Format

Print the required answer.

Sample Input 0

```
3
0 4
1 5
2 3
```

Sample Output 0

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1/1
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