Game

Description

One day, Sora, Shiro, and Izuna are walking on a street, and they see lots of cats.

Sora and Shiro want to feed those cute cats in their pharmacy, so they want to get the cats from their owner: Izuna.

"Let's play a game, Izuna." said Sora, "If we win this game, we can get those cats."

"But if I win, you two must be my servant for one day, desu."

"Aschente."

"Aschente, desu."

The game goes as following:

1. In the beginning of the game, Sora and Shiro put N cats on Cartesian coordinate.
2. The i^{th} cat's position is on (x_i, y_i), and every cats' positions are distinct.
3. Izuna must count the way to draw a triangle with a positive area on the Cartesian coordinate.
4. The three vertices of the triangle must be one of the cats' position.
5. Two ways X and Y are considered different, if there exists one cat, such that plan X uses the cat's position, while plan Y doesn't.
6. Izuna must answer this question within10 seconds!

Since Izuna is poor at counting, she asks you to help her. So, as a fantastic programmer in NTU, please write a program to help Izuna.

Hint 1:

Ten pledges:

1. All murder, war, and robbery is forbidden in this world.
2. All conflict in this world will be resolved through games.
3. In games, each player will bet something that they agree is of equal value.
4. As long as it doesn't violate pledge three, anything may be bet, and any game may be played.
5. The challenged party has the right to decide the rules of the game.
6. Any bets made in accordance with the pledges must be upheld.
7. Conflicts between groups will be conducted by designated representatives with absolute authority.
8. Being caught cheating during a game is grounds for an instant loss.
9. In the name of God, the previous rules may never be changed.
10. Let's all have fun and play together!

Hint 2:

After you tell the answer to Izuna, Sora and Shiro think that this action is cheating! So they finally get the cats, whether your answer is correct or not!

Input

The first line of the input is an integer N denotes the number of cats in the game.

In the next N lines, the i^{th} line contains two integers x_i, y_i denotes the position of the i^{th} cat.

- $1 \leq N \leq 2400$
- $|x_i|, |y_i| \leq 10^9$
- Every cats' positions are distinct

Output

Output one number denotes the number of triangles Izuna can draw.

Sample Input

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6
1 1
1 2
1 3
2 1
3 1
2 2
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Sample Output

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17
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