Problem C. Painting Cottages

Input file:	`cottages.in`
Output file:	`cottages.out`
Time limit:	2 seconds
Memory limit:	256 megabytes

The new cottage settlement is organized near the capital of Flatland. The construction company that is building the settlement has decided to paint some cottages pink and others — light blue. However, they cannot decide which cottages must be painted which color.

The director of the company claims that the painting is *nice* if there is at least one pink cottage, at least one light blue cottage, and it is possible to draw a straight line in such a way that pink cottages are at one side of the line, and light blue cottages are at the other side of the line (and no cottage is on the line itself). The main architect objects that there are several possible nice paintings.

Help them to find out how many different nice paintings are there.

Input

The first line of the input file contains n — the number of the cottages ($1 \le n \le 300$). The following n lines contain the coordinates of the cottages — each line contains two integer numbers x_i and y_i ($-10^4 \le x_i, y_i \le 10^4$).

Output

Output one integer number — the number of different nice paintings of the cottages.

Example

cottages.in	cottages.out
4 0 0 1 0 1 1 0 1	12

The possible nice paintings are shown on the following picture.