

# Problem C

## Triangles

Time Limit: 2 seconds

You are given  $N$  distinct points on a 2D plane. The  $i$ -th point is located at  $(x_i, y_i)$ .

For each integer  $k \geq 1$ , let  $f(k)$  be the maximum number of non-degenerate triangles you can place under the following conditions:

- You add  $k$  new points on the plane such that all  $N + k$  points are distinct.
- Each triangle has its vertices among the  $N + k$  points.
- No two triangles have an intersection with a positive area.

Compute  $\left( \sum_{k=1}^K f(k) \right) \bmod 998244353$ .

### Input

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

```
N K
x1 y1
⋮
xN yN
```

The first line contains two integers  $N$  and  $K$  ( $1 \leq N \leq 200\,000$ ,  $1 \leq K \leq 10^9$ ), representing the number of points and the maximum value of  $k$ . Each of the next  $N$  lines contains two integers  $x_i$  and  $y_i$  ( $0 \leq x_i, y_i \leq 10^9$ ), representing the coordinates of the  $i$ -th point. It is guaranteed that all  $N$  points are distinct.

### Output

Print the answer.

#### Sample Input 1

```
5 1
0 0
0 20
20 20
20 0
10 10
```

#### Sample Output 1

```
6
```

#### Sample Input 2

```
5 20250914
0 0
0 100
20 25
9 14
50 0
```

#### Sample Output 2

```
894241420
```