Moving on the Plane

Input file:	`standard input`
Output file:	`standard output`
Time limit:	2 seconds
Memory limit:	1024 megabytes

There are N points on a plane. The initial coordinates of the i-th point are (x_i, y_i).

Then, there will be M rounds of walks. In each round, every point must move from its current position (x, y) to one of the following four adjacent positions: $(x+1, y), (x-1, y), (x, y+1), (x, y-1)$.

Two plans are considered different if and only if there exists at least one point whose walk path is different in these two plans.

After exactly M rounds of walks, how many different plans are there such that the Manhattan distance between every pair of points does not exceed K?

Output the answer modulo 998244353.

Input

The first line contains three integers: N, M, and $K (1 \leq N \leq 50, 1 \leq M \leq 10^5, 0 \leq K \leq 10)$.

The $i+1$-th line contains the coordinates of the i-th point: x_i and y_i $(0 \leq |x_i|, |y_i| \leq 10^5)$.

Output

Only one line, the answer.

Examples

standard input	standard output
3 2 2 2 2 2 1 1 1	672
3 3 1 3 3 0 2 1 2	2340
2 3 0 3 0 2 1	300