

Infinite Strife

Input file: **standard input**
Output file: **standard output**
Time limit: 3 seconds
Memory limit: 1024 megabytes

The dispute between Bobotown and Boboland has not been resolved over decades. As the prime minister of Bobotown, Bobo has sent down an instruction to deploy n newly developed weapons located at $(x_1, y_1), (x_2, y_2), \dots, (x_n, y_n)$. The coverage of the i -th weapon is determined by a tunable integer parameter k_i ($0 \leq k_i < 2m$). Specifically, the coverage of the i -th weapon with parameter k_i is all points (x, y) satisfying

$$x \cos \frac{k_i}{m} \pi + y \sin \frac{k_i}{m} \pi \geq x_i \cos \frac{k_i}{m} \pi + y_i \sin \frac{k_i}{m} \pi.$$

The territory of Boboland is an axis-aligned square of side $2R$ centered at the origin. Bobo now wonders about the number of choices of integer parameters k_1, k_2, \dots, k_n satisfying that the territory of Boboland is fully covered by these weapons; more precisely, every point of the Boboland's territory is within the coverage of at least one deployed weapon. Sadly, as the vice prime minister of Bobotown, you have to do all the calculations.

The answer might be enormous, and you should output the answer modulo 998 244 353.

Input

The first line contains three integers n, m, R ($1 \leq n \leq 100, 1 \leq m, R \leq 10$), as stated above.

The i -th of the next n lines contains two integers x_i, y_i ($-10 \leq x_i, y_i \leq 10$), denoting the location of the i -th weapon.

Output

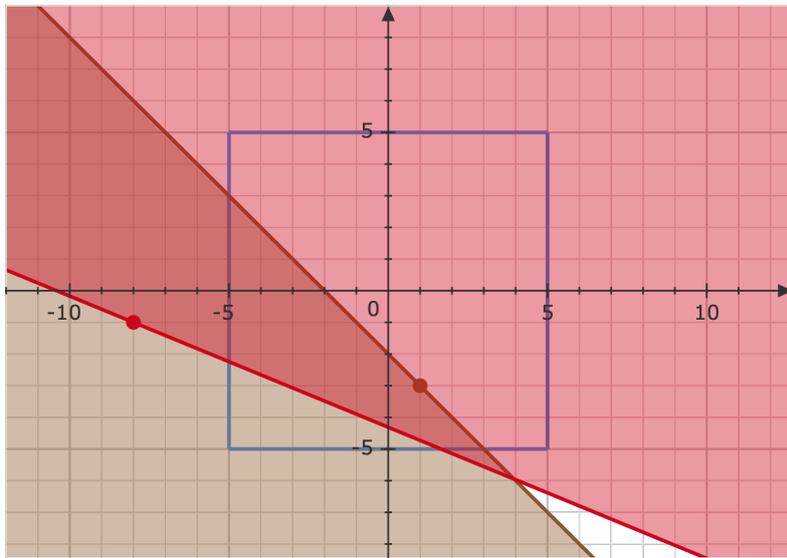
Output an integer in a line, denoting the answer modulo 998 244 353.

Examples

standard input	standard output
2 8 5 1 -3 -8 -1	71
1 8 8 1 2	0

Note

For the first sample test case, one of the possible choices of parameters is 10 and 3, illustrated below.



For the second sample test case, there exists no parameter that satisfies the requirement.