Blocks

Input file:	standard input
Output file:	standard output
Time limit:	1 second
Memory limit:	256 megabytes

Painting is always a boring job.

There are n blocks on an infinite two-dimensional plane. Each block is a rectangle parallel to the x-axis and y-axis with a non-zero area.

The coordinates of bottom-left corner and top-right corner of the i-th block are $(x_{1,i}, y_{1,i})$ and $(x_{2,i}, y_{2,i})$.

There is another block with coordinates of bottom-left corner and top-right corner are $(0,0)$ and (W,H). Nike wants to paint this block black. He will repeatedly choose one of the n blocks **uniformly at random** and fill it black, until the rectangle $((0,0),(W,H))$ is completely filled black.

Find the expected value of the number of times the procedure is done, modulo 998244353. If Nike will never fill $((0,0),(W,H))$ completely black, output -1.

Input

The input contains several test cases, and the first line contains a positive integer T indicating the number of test cases which is up to 500.

For each test case, the first line contains an integer n $(1 \le n \le 10)$.

The second line contains 2 integers W, H $(1 \le W, H \le 10^9)$.

Each of the following n lines contains 4 integers $x_{1,i}, y_{1,i}, x_{2,i}, y_{2,i}$ $(0 \le x_{1,i} < x_{2,i} \le 10^9$, $0 \le y_{1,i} < y_{2,i} \le 10^9)$, describing the coordinates according to the problem statement.

Output

For each test case, output one line, the answer modulo 998244353. If the procedure is impossible to stop, output -1.

It can be proved that the expected value is always a rational number. Additionally, under the constraints of this problem, when that value is represented as Q/P using two coprime integers P and Q, it can be proved that there uniquely exists an integer R such that $R \times Q \equiv P \pmod{998244353}$ and $0 \le R < 998244353$. In this case, you should find this R.

Example

standard input	standard output
1 8 5 5 0 0 2 2 2 2 5 5 0 2 2 5 2 0 5 2 0 0 1 1 1 1 5 5 0 1 1 5 1 0 5 1	10