Problem J. Joining Points

Input file:	*standard input*
Output file:	*standard output*
Time limit:	1 second
Memory limit:	512 mebibytes

You are given $3n$ different points on a circle. Each of these points is colored in one of n colors, such that each color appears exactly three times.

You want to draw n non-intersecting arcs with ends on given points.

For these arcs, the ends of the arc should have equal colors, and no other point on the arc should have this color.

Note that you are drawing arcs, not chords.

Find the number of suitable drawings, modulo 998 244 353.

Input

The first line of input contains one integer n ($1 \le n \le 200\,000$): the number of colors.

Next line contains $3n$ integers $c_1, c_2, \ldots, c_{3n}$ ($1 \le c_i \le n$): the color of the i-th point on the circle, in clockwise order.

It is guaranteed that each color appears exactly three times.

Output

Print one integer: the number of suitable drawings modulo 998 244 353.

Examples

standard input	standard output
3 1 1 1 2 2 2 3 3 3	8
2 1 1 2 2 1 2	3