Problem J. Mixed Drinks

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

There are n types of drinks. The sweetness, the sourness, and the bitterness of the i-th drink is a_i, b_i, c_i, respectively. If you mix k types of drinks with (sweetness, sourness, bitterness) = $(p_1, q_1, r_1), \cdots, (p_k, q_k, r_k)$, the sweetness, the sourness, and the bitterness of the resulting drink will be

$$(\max\{p_1, \cdots, p_k\}, \max\{q_1, \cdots, q_k\}, \max\{r_1, \cdots, r_k\})$$

Snuke decided to choose one or more drinks from the n drinks and mix them, and create a new drink. Count the number of possible combinations of (sweetness, sourness, bitterness) of the drink Snuke will create. It is guaranteed that each of $(a_1, \cdots, a_n), (b_1, \cdots, b_n), (c_1, \cdots, c_n)$ will be a permutation of $(1, \cdots, n)$.

Input

First line of the inut contains one integer n. Then n lines follow, i'th of those lines contains three integers a_i, b_i and c_i.

Constraints:

- $1 \leq n \leq 10^5$
- $(a_1, \cdots, a_n), (b_1, \cdots, b_n), (c_1, \cdots, c_n)$ are permutations of $(1, \cdots, n)$.

Output

Output the number of possible combinations of the sweetness, the sourness, and bitterness.

Examples

standard input	standard output
4 1 2 3 3 1 1 4 4 2 2 3 4	8
10 3 1 3 7 8 2 10 10 5 1 3 9 9 2 4 5 7 6 4 6 10 8 5 1 6 9 7 2 4 8	72

Note

In first sample, for ex, if you mix the second and the fourth drink, the sweetness, the sourness, and the bitterness of the new drink will be $(3, 3, 4)$.