There are N fruits in a garden. Each fruit is either an apple or a pear The garden is a coordinate system and all fruits are on points with integer positive coordinates.

Mathew the hedgehog is located on point (0,0) in this garden. He can make moves by either going to the right by 1(increasing his x coordinate by 1), or by going up by 1(increasing his y coordinate by 1). He wants to collect as many fruits as possible. If there are multiple ways to achieve this, he wants to find the one with the lowest absolute difference between the number of pears and the number of apples.

Note that you aren't required to find the required path, only the number of collected fruits and the absolute difference.

Constraints:

N <= 65000

1 <= X\_i, Y\_i <= N

1 <= Z\_i <= 2 - the type of fruit

Input:

N

X\_1 Y\_1 Z\_1

...

X\_N Y\_N Z\_N

Output:

Sum Abs\_diff

Subtasks:

1. N <= 100 - 5 points

2. N <= 400 - 5 points

3. N <= 3500 - 10 points

4. N <= 15000 - 15 points

5. N <= 35000 - 25 points

6. N <= 65000 - 40 points

Example input:

4

1 3 1

2 4 1

3 1 2

4 2 2

Output:

2 2