Problem E. Easy Everest

Input file:	standard input
Output file:	standard output
Time limit:	2 seconds
Memory limit:	256 megabytes

There are n climbers on the south slope of Everest, staying in points with heights $h_1, h_2, \ldots, h_n$, and also n climbers on the north slope, staying in points with heights $g_1, g_2, \ldots, g_n$.

Let's call an arrangement of the climbers *safe* if for each possible height the number of climbers situated in points with such height on both slopes are equal. The climbers want to take a safe arrangement to ride out the storm. In order to do this, every climber can change his position on his slope (he could not go to other slope). To change the height of his position from a to b, the climber has to spend $|b - a|$ units of energy. Now, since the hike is definitely going to be difficult, the climbers want to spend the minimum total amount of energy to take a safe arrangement. Your task is to calculate that amount.

Input

The first line of the input contains integer n ($1 \le n \le 3 \cdot 10^5$) — the number of climbers.

The second line contains n integers h_i ($1 \le h_i \le 10^9$) — the heights of positions of the climbers on the south slope.

The third line contains n integers g_i ($1 \le g_i \le 10^9$) — the heights of positions of the climbers on the north slope.

Output

Output one line with the minimum total amount of energy the climbers need to spend to take a safe arrangement.

Examples

standard input	standard output
2 1 7 4 3	5
3 1 2 2 1 2 1	1